



THE RESOURCE FOR INFORMATION EXECUTIVES

YOUR PROFESSIONAL AGENDA

The 6 Essential Best Practices for Delivering Enterprise Value

Page 74

EXCLUSIVE SURVEY

OVER 500 I.T. CHIEFS
PROVIDE TIPS ON:

- ▶ How to Be Strategic
- ▶ How to Be Effective
- ▶ How to Implement Good IT Governance

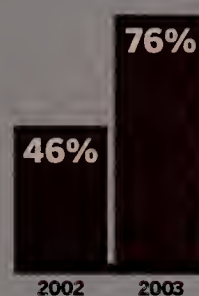
PLUS

Salaries • Titles • Tenure •
Budgets • Staffing • Reporting Structures •
Priorities and More

Page 67

The New Strategists

More CIOs say
strategic skills
are a must

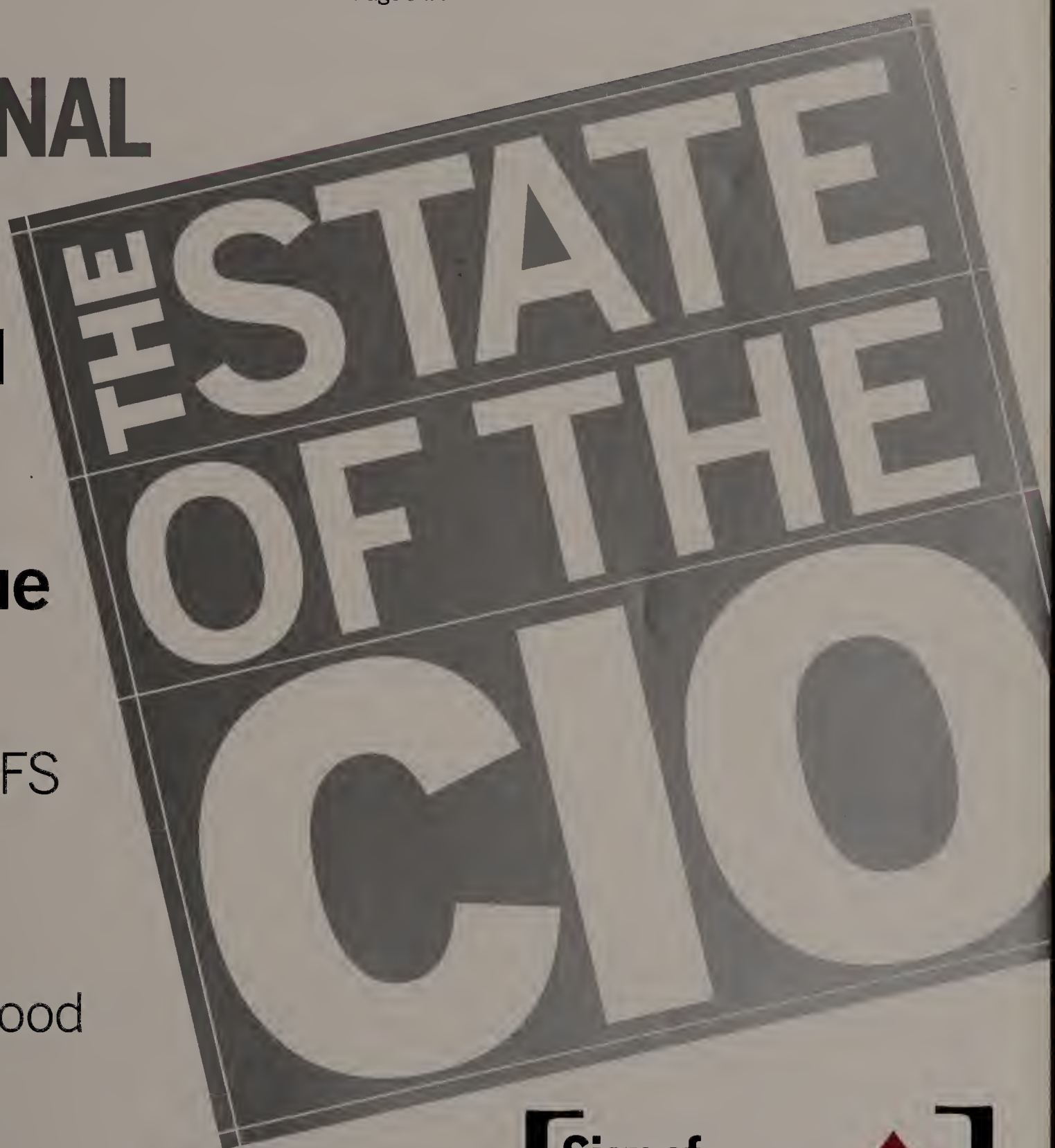


From The State of the CIO 2003 Survey

2002 2003

What's **Your** Agenda?
Take the CIO Quiz to Find Out

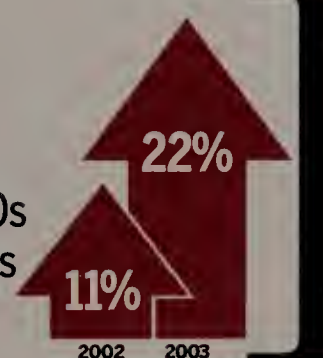
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Sign of the Times

Twice as many CIOs
now report to CFOs

From The State of the
CIO 2003 Survey



2002 2003

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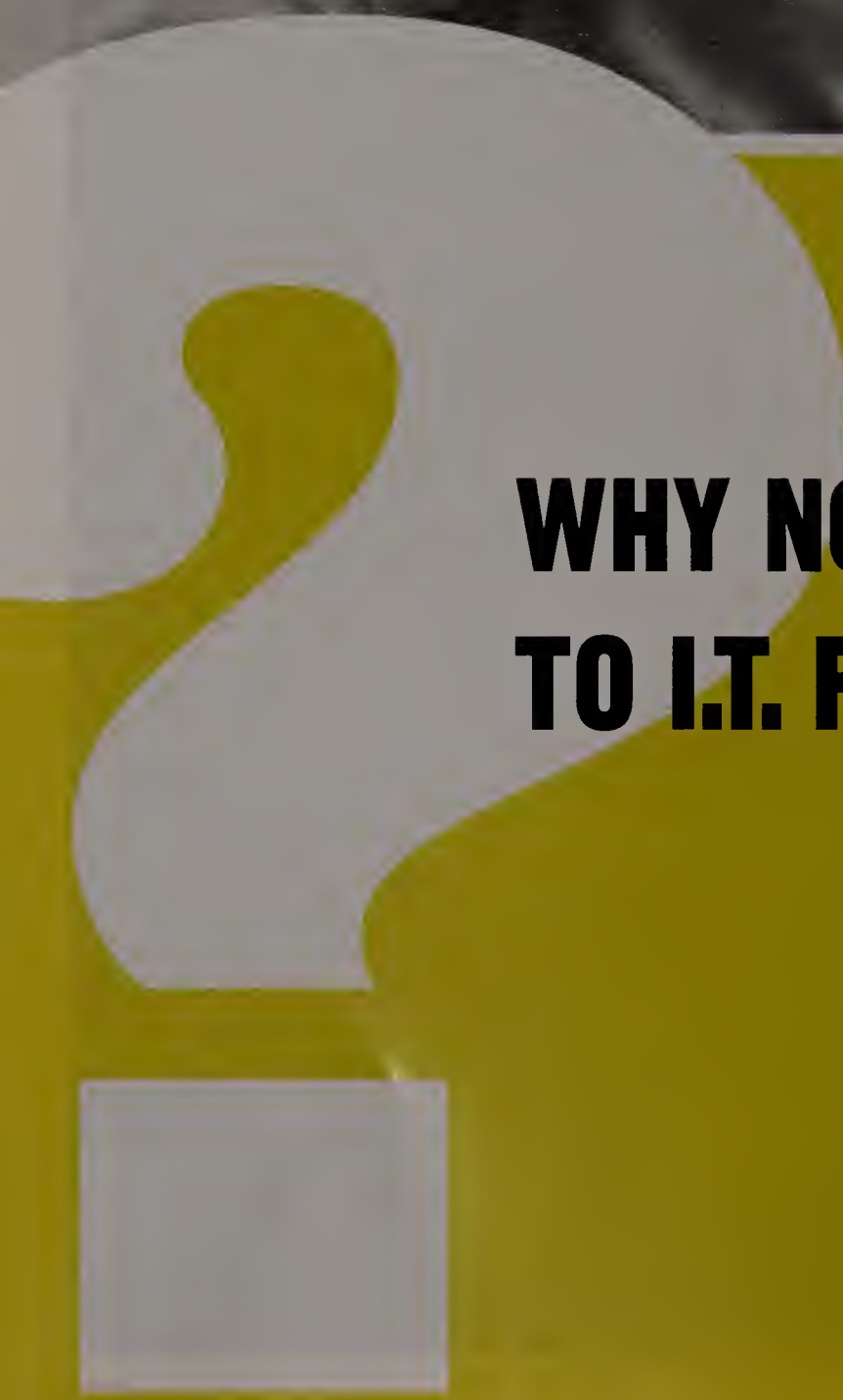
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Special Report

OVERVIEW

The Professional Agenda | 54

Our second-annual exclusive survey of more than 500 IT executives reveals much about the tensions of your job and the changes in your role. *By Edward Prewitt*

STRATEGY

The Importance of Being Strategic | 58

Keeping your nose to the grindstone is a sure way to grind your nose off. *By Edward Prewitt and Stephanie Overby*

QUIZ

What's on Your Agenda? | 64A

Circumstances and preferences create different types of CIOs. Take our quiz to confirm just what kind of CIO you are. Then find your agenda and see your 10 items for next year's to-do list. *By Edward Prewitt*

SURVEY RESULTS

What You Have to Say | 67

A year after our first "State of the CIO" survey, more than 500 IT leaders tell us they're spending more time on alignment and less time on staffing and new technologies. And, needless to say, they're still wrestling with scarce resources.

By Lorraine Cosgrove Ware

BEST PRACTICES

What Leading CIOs Do | 74

Our best practices CIOs say that to be an effective CIO, you need to do six things. *By Stephanie Overby and Elana Varon*

MORE ►►►

State of the CIO photos (clockwise from upper left): Los Angeles's Liza Lowery, Hygeia's Rod Hamilton, Mayo Clinic's Jack Cranmer, Waste Management's Tom Smith, Thomasville Furniture's Ames Flynn, U.S. Olympic Committee's Becky Autry, Tenneco Automotive's Bill Haser, Fortis Health's Roger Jones



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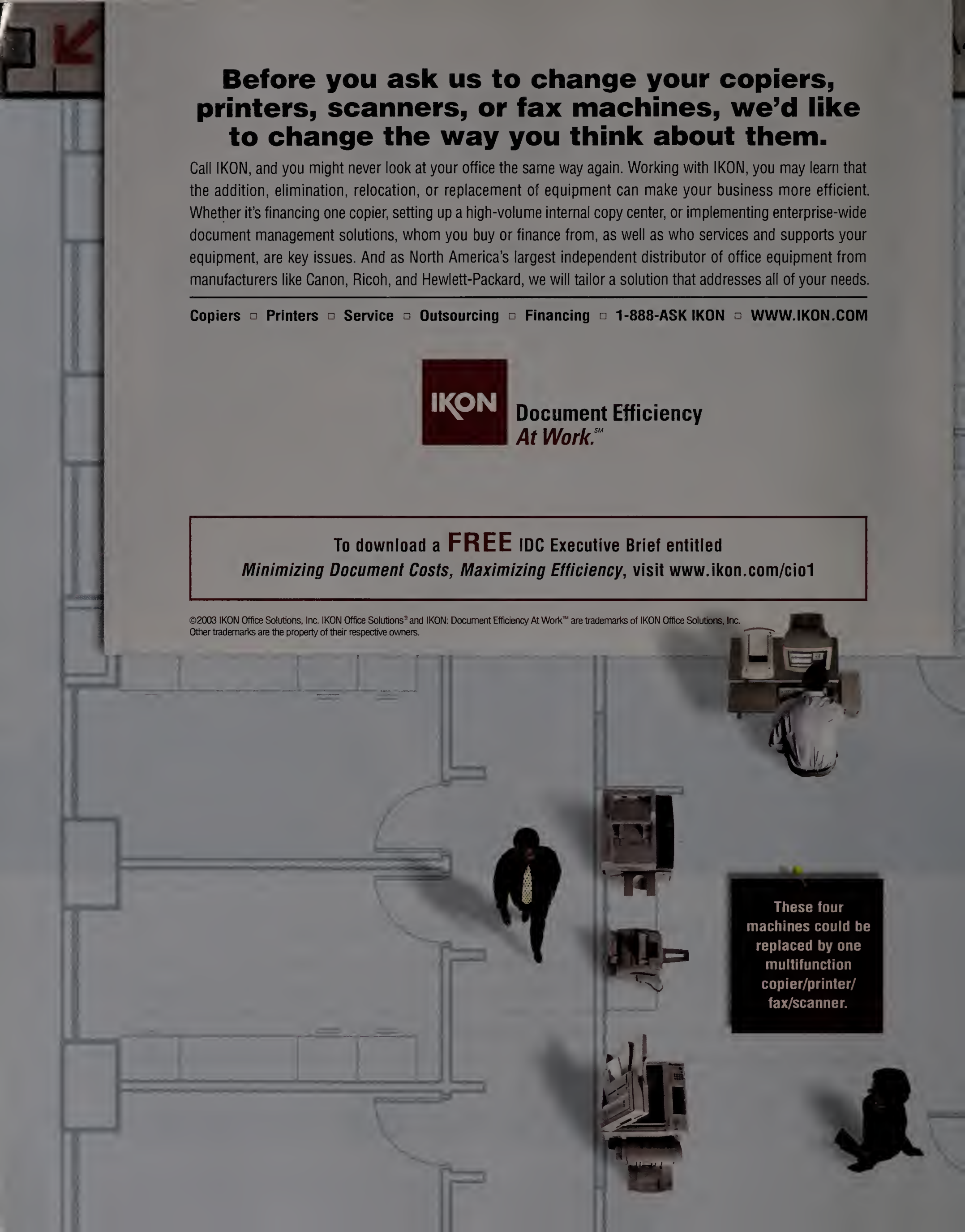
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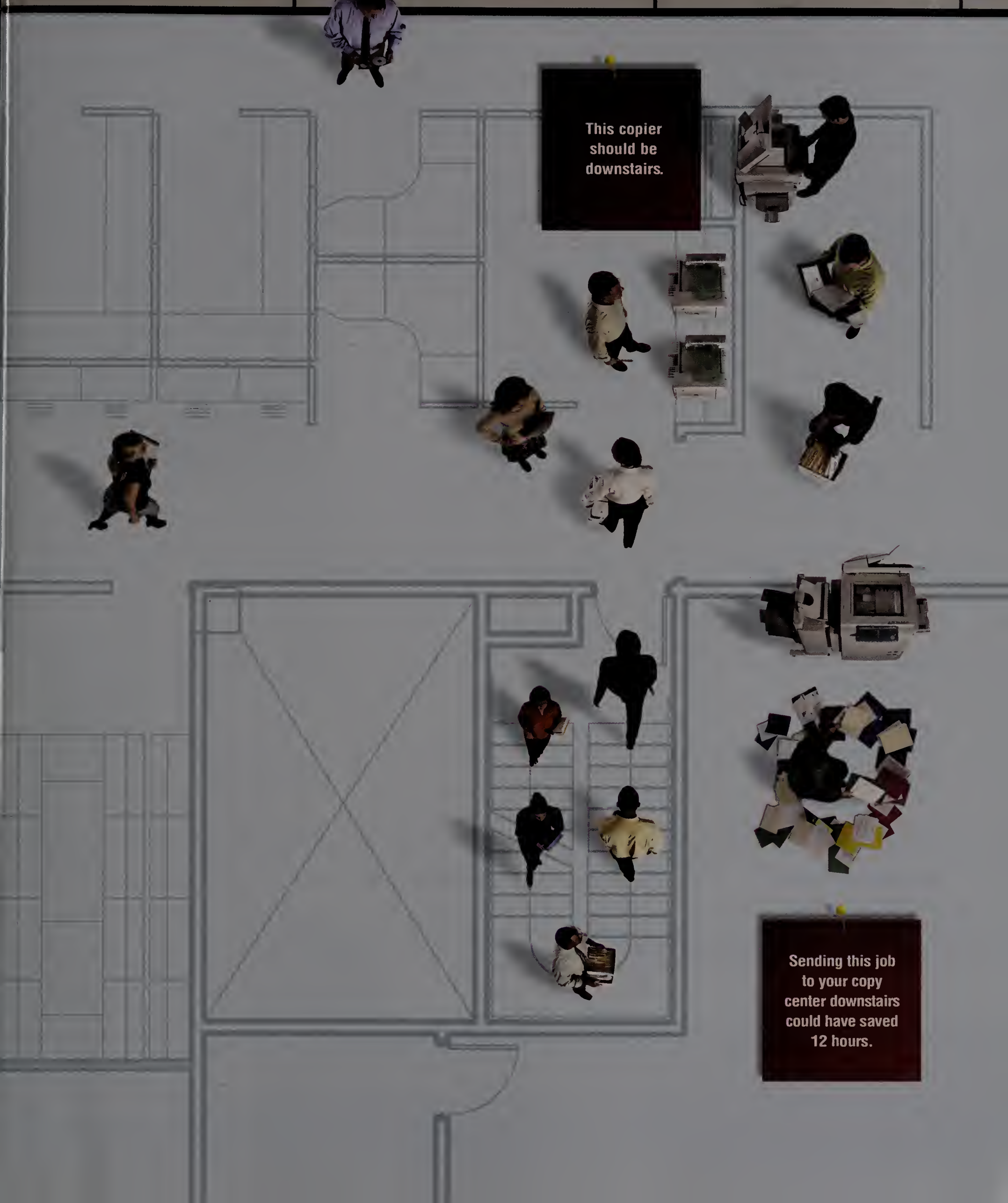
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An aerial photograph of an office floor plan. The floor is light-colored with dark lines indicating walls and doorways. Several people are visible: one person in a white shirt is sitting at a desk in the upper right; another person in a dark suit is walking in the center; a third person in a dark shirt is sitting on the floor in the lower right. Along the right side of the floor plan, there is a vertical line of four office machines: a copier, a printer, a scanner, and a fax machine. A dark rectangular box with white text is positioned to the right of these machines.

**These four
machines could be
replaced by one
multifunction
copier/printer/
fax/scanner.**



Features

BOOK EXCERPT | **CONNECTING THE DOTS** Reducing Risk by Managing Chunks | 92

Breaking projects into smaller, more manageable chunks reduces the risk of failure and allows companies to better align their project portfolios with corporate strategies.
By Cathleen Benko and F. Warren McFarlan

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NET GAINS Decouple and Conquer | 40

Unlock value by using the Internet to divide your company. *By Mohanbir Sawhney*

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A Merrill Lynch CFO offers four tried-and-true tools for establishing common business and technology goals.
By Marvin Balliet

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To get value from CRM, use it to empower people—not to keep tabs on them.
By John Sviokla and Audris Wong

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Your Guide to Managing

Line Up the Team

Alignment is difficult these days. But what if it could be made painless? Here's how two CIOs lead their companies toward alignment harmony. *By Ben Worthen*

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Convey the corporate DNA.

Leadership Agenda | 102

The success of change initiatives depends on employee enthusiasm rather than leadership directives. *By Susan H. Cramm*



MassMutual CIO **Christine Modie** saved \$12.6 million in a year with her alignment "playbook"—and her staff is much more in step with the business now.

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You are not done investing in security.

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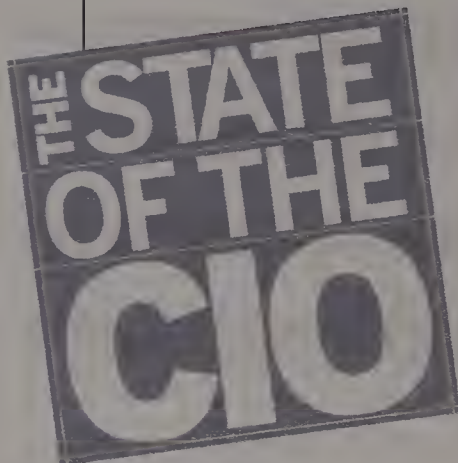
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Interactive features from April 1 to April 14



ASK THE SOURCE

Should I do it differently?

Tim Wright, CIO at Geac Computer, believes that strategic planning for IT spending is how his company will grow out of the economic malaise (see **The Importance of Being Strategic**, Page 58). When making choices with limited IT budgets, he says to his business executives: "Here's the



Tim Wright, CIO at Geac Computer

\$10 million I have to spend, how I'm allocating it and why. Is there any reason why I should do it differently?" For the next two weeks, ask Wright your questions about becoming an effectively strategic CIO, or share your insights at www2.cio.com/ask/source.

WEIGH IN

What are *your* best practices?

We culled best practices from our survey and interviews (see **The Six Best Practices: What Leading CIOs Do**, Page 74). Do you agree that it's absolutely vital for you to be on the executive team? Is it always necessary to assign IT staff as liaisons to business units? What else should the CIO do—or not do? Share your experiences at comment.cio.com/weighin.

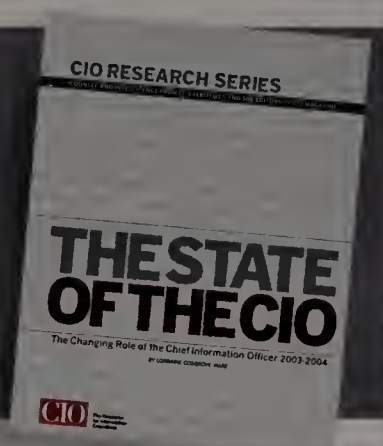
TAKE THE QUIZ

What kind of CIO are you?

Take our quiz (following Page 64), and you'll get the answer to that question. Take the quiz online and you'll get immediate feedback on where you stand, find out how you match up against our survey respondents and discover live links to sources to improve your score. Go to www.cio.com/state.

The Full Story

Our second annual "State of the CIO 2003" survey (see **What You Have to Say**, Page 67) identifies the key practices that are critical for every CIO's success. The complete survey, geared to both operational and strategic IT, presents the numbers you need to know, analyzed by industry, and will be available for purchase in May from www.theciostore.com.



You can also find these links in the **WEB CONNECTIONS** box at www.cio.com.

Our Daily Web

MONDAY TechTact

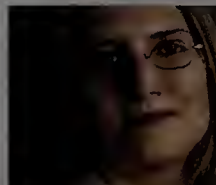
Technology Editor Christopher Lindquist covers what's coming.



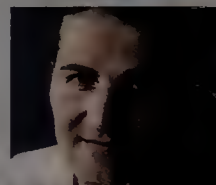
LINDQUIST

TUESDAY

Alarmed Security experts Sarah Scalet and Scott Berinato give you something new to worry about.



SCALET



BERINATO

WEDNESDAY

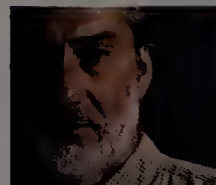
Metrics Web Writer Jon Surmacz makes sense of the numbers.



SURMACZ

THURSDAY

Sound Off Web Editorial Director Art Jahnke opines on ethical dilemmas.



JAHNKE

FRIDAY

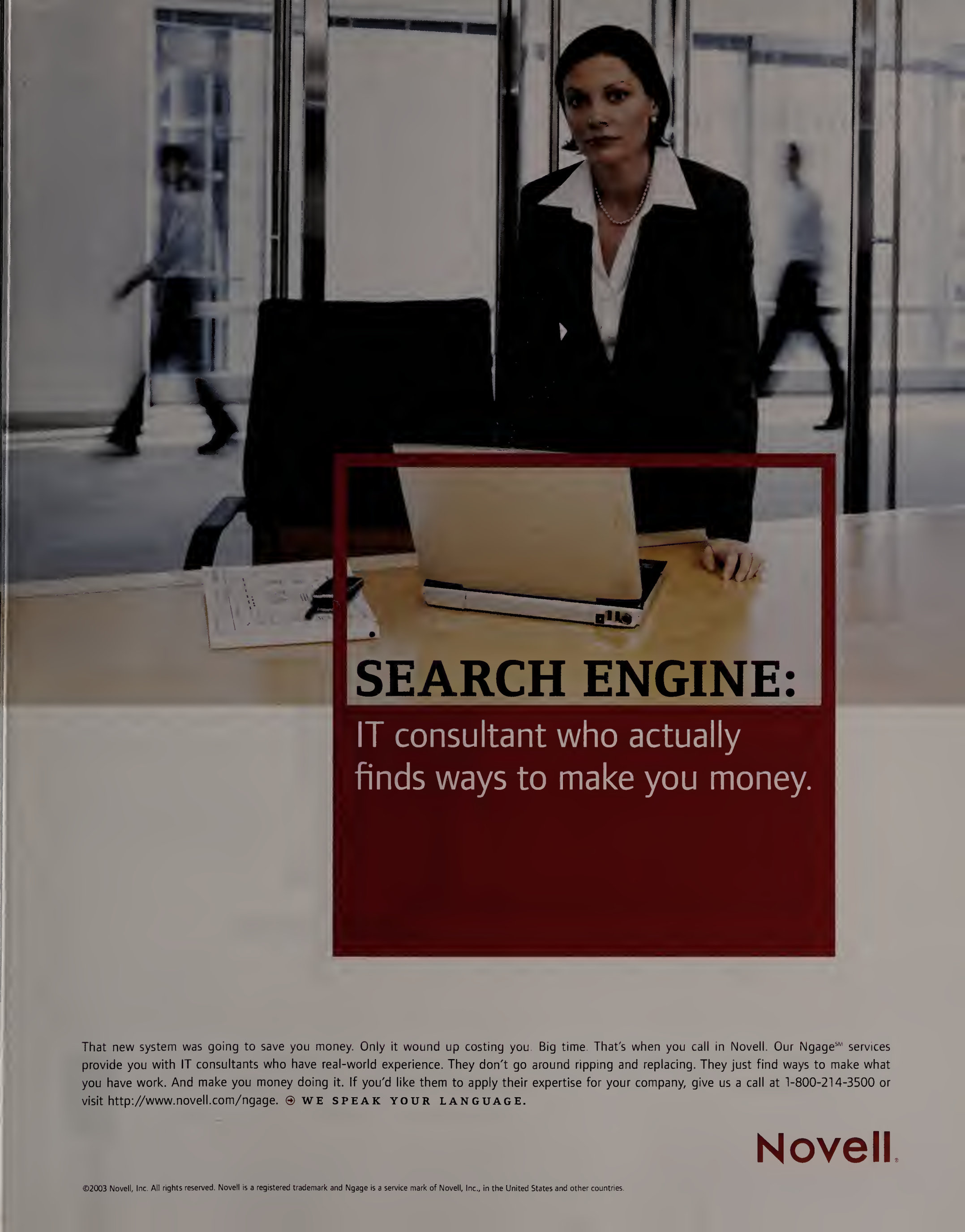
The Big Picture Charts and graphs that are worth a thousand words.

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From the Publisher

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Certify Security



Gary J. Beach

A FEW MONTHS AGO, I sat around a breakfast table with the CEOs of several security organizations. Joining us was Richard Clarke, then the cybersecurity czar for the White House.

After Clarke's comments, the business executives peppered him with questions. One caught my attention: How could the industry create an event similar to Y2K that would encourage CIOs to invest in security products?

I proposed an idea. Let's create the IT security equivalent of the well-known Underwriters Laboratories. We can call it Security Underwriters Laboratories. With eyebrows raised, several at the table thought the idea had merit.

During the following weeks, I talked about the idea with CIOs, CSOs and the management team at Underwriters Laboratories. Here's what we propose to create:

The Security Underwriters Laboratories (SUL) would be set up as a nonprofit organization funded by end user companies—not vendors. The goal would be to certify that a business has governance policies and technical infrastructure procedures in place to make that business a more secure company. Upon getting certification, a business would earn an SUL medallion that would last for three years.

Yes, there are standards such as ISO 17799 already in place. But many people I spoke with claimed the process to apply for

and earn that standard is too complicated and takes too much time. Something simpler is needed.

One CIO who works for an insurance company posed an interesting possibility. Might the insurance industry write lower premiums for companies with SUL accreditation? The jury is still out on that. Another IT executive employed by a large financial services company suggested SUL accreditation levels should be allocated like Standard & Poor's ratings. A "triple A" SUL medallion would be higher than a "double A" and so on.

If SUL is to become a reality, ongoing operational budgets must be supported by fees from businesses seeking accreditation. Most people I spoke with felt security vendors could play an important role early on by getting SUL off the ground. But after that, vendors should recede to the sidelines.

What's your take? Could SUL become a reality? Do you see value in such an approach? Send me your comments, and I will use them in an upcoming column.



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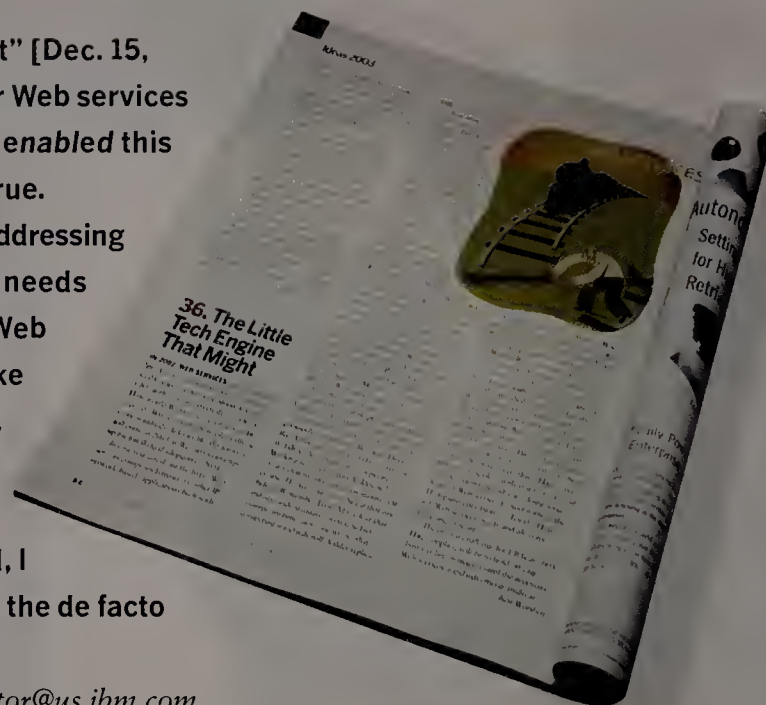
THE FUTURE OF WEB SERVICES

Ben Worthen makes some very good points in "The Little Tech Engine That Might" [Dec. 15, 2002/Jan. 1, 2003], and I couldn't agree more with his emphasis on the need for Web services to ramp up substantially in 2003. In fact, I'd like to see the words *Web services enabled* this year on as much enterprise software as possible, assuming, of course, that it is true.

For that to happen, several key things need to take place. First, as we continue addressing interoperability issues, the growing number of businesses using Web services needs to publish specs that enable companies to speak the same language via their Web services products. The way to do that is to participate actively in key groups like the Web Services Interoperability Organization and industry standards groups.

Second, there are, in fact, Web-based security protocols available today, but we can do even better. We need to address security issues from the user's point of view so that we can make IT systems integration as risk-free as possible. Third, I believe that Java, with its broad industry support, maturity and flexibility, will be the de facto standard for invoking and defining Web services.

Bob Sutor • Director of Web Services Technology • IBM • sutor@us.ibm.com



WHY OUTSOURCE?

Although there is much merit to the argument that outsourcing software development may be an advantage [see Trendlines, "Save Time and Money: Outsource Software Implementation," Feb. 1, 2003], it leaves two very important aspects unsaid.

First, an enterprise will usually only outsource a software project after all of the requirements are fully spelled out and documented. The creeping requirements that sneak into an in-house program are externally called contract changes. Which leads to the second point: the element of cost. There may be valid reasons for contracting software services. But it should be emphasized that outsourcers cost more per productive hour than the IT staff. IT is usually a cost center that does not charge a profit-margin fee.

Granted that specialized talent not found in-house may be a valid argument for outsourcing, it is not necessarily true that outsourcing can be applied as a cure-all, something that the article does not

imply, but could be inferred by readers.

Joseph S. De Natale
The Clipper Group

Editor's response: Many CIOs are telling us that, in fact, they are under pressure to outsource software development for cost reasons alone—a trend we will examine soon in CIO. We agree that it isn't always cheaper to outsource, but neither is it inherently more costly just because it includes a profit margin for the vendor. The substantial salary differences for offshore programmers reduces the price per line of code. But companies must factor in the cost for the more vigilant management and quality control oversight that must accompany offshore programming.

WHAT ABOUT URUGUAY?

Thanks to Stephanie Overby for her great article ["A Buyer's Guide to Offshore Outsourcing," Nov. 15, 2002]. I just read it. I agree with most of the concepts exposed in it; however, I missed

Uruguay in the Americas map. I'm sure Uruguay deserves a place in the global offshore map for the following:

1. Technicians' qualifications (including English language)
2. Amount of exported software (even more than Brazil)
3. Corporate IT centers (for example, Tata Consulting)
4. Development centers, such as Zon-americas
5. Low cost and similar culture, compared to other offshore development regions.

Fernando Lopez
Grupo Quanam
fernando.lopez@quanam.com.uy

WHAT DO YOU THINK?

Send your thoughts and feedback to letters@cio.com. Letters may be edited for length or clarity. For links to all articles mentioned, go to www.cio.com/printlinks.



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Edited by Lafe Low and Michael Goldberg

B I O - I . T .

Iceland's Database Tussle

THE GENE-HUNTING biotechnology company DeCode Genetics may be best known for its quest to establish and commercialize a database of the personal medical records of all the citizens of Iceland (see "Iceland's Dilemma: Privacy vs. Progress," available at www.cio.com/printlinks).

But today, three years after Iceland's Ministry of Health granted an exclusive license to DeCode to create the Icelandic Health Sector Database, it remains empty.

Delays in obtaining necessary government approval, continuing opposition from doctors and financial struggles at DeCode are raising doubts about the project's viability. "The impression of everyone here is that the database will not be a reality," says Steindor Erlingsson, a historian and author of *Our Genes*, a recent book about DeCode that was published in Iceland.

Under the 1998 law establishing the health record database, DeCode does not need individual consent for use of private medical data, but the database must meet

security and privacy standards set by the government's Data Protection Commission.

The problem of personal identification of information from the database remains "most challenging and most urgent to curb," says Hordur Helgi Helgason, deputy commissioner of the Data Protection Commission. Helgason says that the commission has received and evaluated about half of the material it will want to examine to determine whether DeCode's database design adequately protects Icelanders' private records.

Helgason says DeCode's delivery of specifics on the database plan has been slower than either the government or the company expected. Changes to the database structure proposed by DeCode have further slowed the approval process.

Beyond this process, many of Iceland's doctors are resistant to the Health Sector Database, even though the Icelandic Medical Association won a concession in

Continued on Page 26

A P R I L 1 S T N E W S

Now *That's* a Merger!

THE HEADS of four of the world's top technology vendors, citing the need for "a simpler, cheaper IT" for CIOs everywhere, announced that they would merge effective April 1. The new company, comprising IBM, Microsoft, Oracle and Sun Microsystems, would be worth nearly \$450 billion. It would be the biggest business deal ever and would need to win both regulator and shareholder approval.

The four chairmen—(clockwise from top left) IBM's **Samuel J. Palmisano**, Microsoft's **Bill Gates**, Oracle's **Larry Ellison** and Sun Microsystems' **Scott McNealy**—said at a joint press conference in Paris that meeting CIOs' call for simpler licensing fees, uniform and open technology standards for hardware and software, and superior customer service made the merger a must.

"We have to do this for the good of technology customers everywhere," said Gates, standing in the glass pyramid at the Louvre Museum. "It's finally time to bury the hatchet. Besides, I love Java—.Net, dot-shmet."

The new entity will be called Mona Lisa, Ellison said, "because this will be a work of art. Way better than that AOL Time Warner thing."

The executives said that instead of one CEO, they would put their egos in a blind trust and share the helm. "We're thinking of ourselves as the Gang of Four," Palmisano said.

Mona Lisa was most preferable, McNealy said. "We used one of those anagram engines on the Web, but the best we could come up with was 'Mom Stirs on a Crucible of Microsystems.' That sounds too much like an April Fool's joke, don't you think?"

—Michael Goldberg





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IT Watching Over You



GM Canada CIO Joyce Sumara, sitting in a Saturn VUE, used OnStar to locate help after a recent car accident.

ON THE MORNING OF NOV. 1, 2002—the day she was promoted to CIO of GM Canada from director of customer experience—Joyce Sumara drove to a remote lake in Ontario to meet her husband at their new land. Driving down an isolated dirt road, she hit a patch of ice and lost control of her 2003 Oldsmobile Bravada. “You totally feel out of control,” says Sumara of her experience during the accident. “I was struck by the horror of realizing I couldn’t do anything.”

Her vehicle rolled over, and Sumara ended up trapped on her side, still held by her seat belt. She was shaken, but alive. Since there was no cell phone coverage in the area, she reached for the OnStar button on her dashboard. Within seconds, she was speaking to the police through OnStar. Thirty minutes later, emergency services arrived.

With OnStar, a driver and call center adviser communicate through an analog cellular connection. Sumara says GM plans to upgrade to digital, but analog provides the broadest coverage for now. OnStar has 2 million subscribers who use it for driving directions or emergencies, and from reporting accidents to unlocking their vehicles (after leaving their keys in the car). The system uses a combination of cellular and GPS technology.

“I was on a road that is not on a map,” Sumara says. “When I was talking with the [OnStar] adviser, she immediately identified my location and indicated the name of the road. It was a good example of how up-to-date their records are.” Though the accident totaled her car, Sumara says she “ended up with just a few cuts and bruises.”

—Meridith Levinson

Iceland's Genetic Database

Continued from Page 24

August 2001, when DeCode promised to find a way to make data entry reversible at a patient's request.

Dr. Petur Hauksson, chairman of the opposition group Mannvernd, says that despite the agreement, many doctors remain opposed to it. “It will cause an uproar in the hospitals if it's forced through,” Hauksson says. The database can be saved, he says, but only if Iceland will change the law to “ask consent, and tell [Icelanders] what will happen to the information. With cooperation this could be done and will be a valuable resource.”

At DeCode, delays in establishing the national database have not slowed gene-hunting efforts. Through direct collaborations with doctors, DeCode has collected disease data and DNA samples, with full consent, from 80,000 Icelanders—or close to one-third of the population. Uniting clinical and genetic information with publicly available genealogical data, the company used its proprietary software to identify genes involved in stroke, hypertension, obesity, schizophrenia and osteoporosis. Last year, DeCode's success led to major research agreements with drug giants Roche and Merck. Early this year it partnered with IBM to sell its Clinical Genome Miner discovery software system to other researchers.

DeCode remains committed to the national database, but it is not depending on it for success. “Our main work is finding genes linked to disease, and drug targets. The Icelandic Health Sector Database is supposed to supplement the data we now have on 80,000 people—a significant portion of the population,” says company spokesman Edward Farmer. “Our basic core of work is going very well and is not affected by this, but it's something that we want to do.”

Even if the politics get sorted out, the struggle to build the Iceland database is another among several challenges DeCode faces. DeCode lost more than \$100 million in the first nine months of 2002, after taking in just over \$30 million. Last September, the company laid off about one-third of its workforce in an effort to cut costs and reach breakeven in 2003. DeCode shares that sold for nearly \$30 in 2000 now rate about \$2, giving the company a market cap of a little more than \$110 million.

And the estimated cost to build the Icelandic Health Sector Database? Between \$135 million and \$250 million.

—Pat McCaffrey

OUTSOURCING

IBM Invades Germany



DEUTSCHE BANK AG, Germany's largest bank, has pulled off an unusual feat in the land of entrenched unions and stiff labor laws: It outsourced a sizeable chunk of its European IT operations. The roughly \$2.5 billion, 10-year contract with IBM Global Services, which includes the consolidation of data centers in eight European countries, should save Deutsche Bank around \$1 billion in annual operating costs. What's more, it could prompt other German companies to follow.

At a January IT conference in Dusseldorf, Germany, Deutsche Bank COO Hermann-Josef Lamberti sounded positively American when he talked about the deal. “We aim to push our computer commodity business to outsourcers and drive our application development down deeper into our business units,” he said.

Could other European players follow? “I can't speak for others,” Lamberti said. “But I can say there is movement in the market.”

—John Blau

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By the Numbers

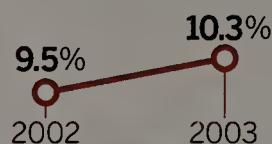
By Lorraine Cosgrove Ware

You Are Not Done Investing in Security

COMPANIES WILL CONTINUE to spend on security during the next three years, according to a recent report from IDC (a sister company to *CIO*'s publisher). While many IT sectors expect lackluster growth, the security segment is forecast to grow at a compound annual growth rate of 25 percent from 2001 to 2006. IDC senior research analyst Brian Burke says that attacks on corporate computer systems, both wired and wireless, will continue to become more sophisticated and will target multiple network vulnerabilities. "More viral and harder-to-detect blended threats or hybrid worms—viruses that build upon previous viruses—will become increasingly more common," Burke says. He suggests that companies continually work to identify vulnerabilities.

Security Budgets Increase in 2003

Percent of IT budget allocated to security

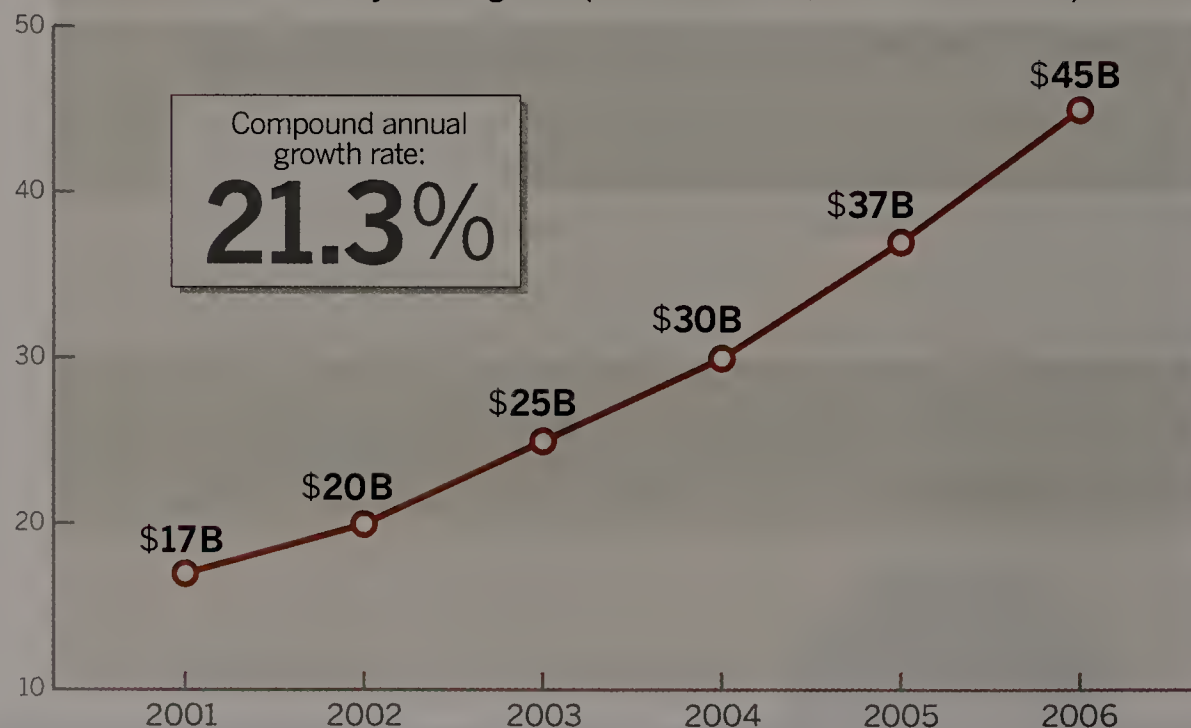


8.5%

increase year-to-year

IT Security Market Shows No Signs of Slowing

Total IT security market growth (includes hardware, software and services)



SOURCE: FEBRUARY 2003 IDC REPORT, "THE BIG PICTURE: I.T. SECURITY SOFTWARE, HARDWARE, AND SERVICES FORECAST AND ANALYSIS, 2002-2006"

Best Practices

Subscribe to a security service for patches.

As the new old saying goes, "Security is only as good as its last update," says IDC's Brian Burke. Protect your network from known vulnerabilities, such as those found by the most recent virus SQL Slammer, by signing up for automatic patch updates or alerts. "Even three days is too long a time to go without updating your antivirus software," Burke adds.

Enforce security policy.

Burke cautions that a number of industries such as health care and finance are legally bound by HIPAA and other regulations to protect customer privacy. "Having a security policy isn't enough," Burke says. "Companies must enforce their policy and ensure that employees are adhering to it."

Filter spam. Burke recommends that CIOs take spam seriously. "Spam is no longer just a nuisance. It takes up valuable network bandwidth and is a conduit for viruses," he says.

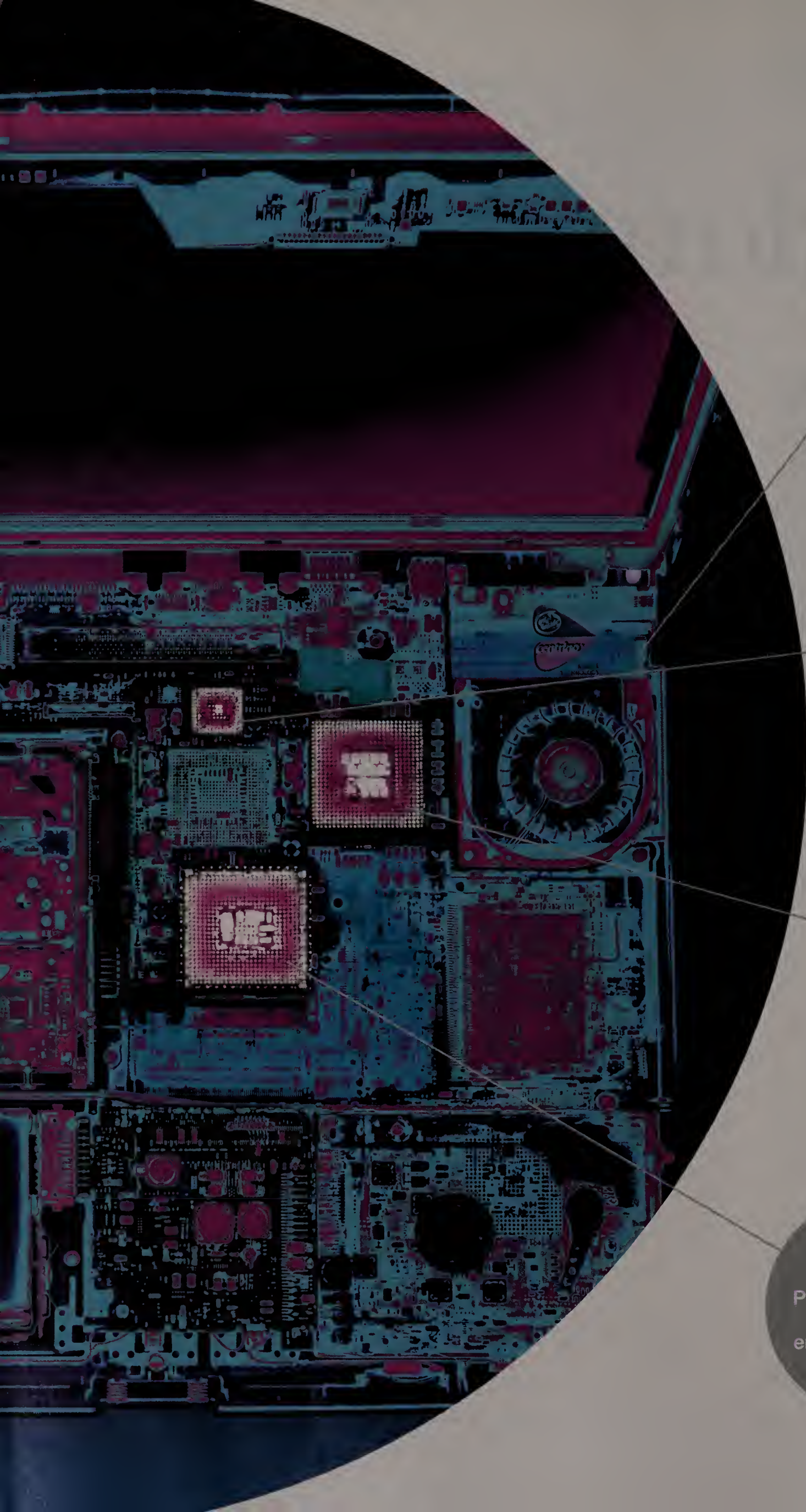
Compliance and Customer Confidence Driving Security Investment

Key factors in security spending



SOURCE: NOVEMBER 2002 "CSO SENSOR," A STUDY CONDUCTED BY *CIO*'S SISTER PUBLICATION, *CSO MAGAZINE*

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BASEBALL I.T.

The CIO of Summer

WHEN HE INTERVIEWED to be the Detroit Tigers' IT skipper in 1999, Cole Stewart couldn't name a single player on the roster. What Stewart did offer was experience connecting IT systems to business processes, gained during a 22-year career at General Motors. And with the club building the new \$300 million Comerica Park at the time, Stewart was deemed the right choice to manage the Tigers' IT. He's now probably the closest thing to a bona fide CIO in major league baseball.

"They didn't need somebody who knew baseball. They needed somebody who knew how to get the stadium up and running," says Stewart, whose official title is senior director of information technology.

Stewart, 53, joined the Tigers front office with three tasks: Make sure 40,000-seat Comerica Park was built to accommodate new information systems; head off any Y2K problems; and institute IT standards for systems and networks where none existed. With these tasks accomplished and the new downtown Detroit stadium opened, Stewart says he's continuing to work on

integrating business systems in an industry known for creating information silos. He supports everything from back-office functions to stadium message boards. He's worked with marketers to mine data from a CRM application to identify prospects for season ticket plans, and to connect scouts in the field—typically zealous guardians of their own applications—to management back home.

Stewart says he's doing the same things he did running truck deployment at GM—a job that meant supporting an entire product life cycle, from concept design through manufacturing to shipments. Only here, baseball is the product. Sales revolve around tickets, advertising

"They didn't need somebody who knew baseball. They needed somebody who knew how to get the stadium up and running," says the Detroit Tigers' IT skipper.

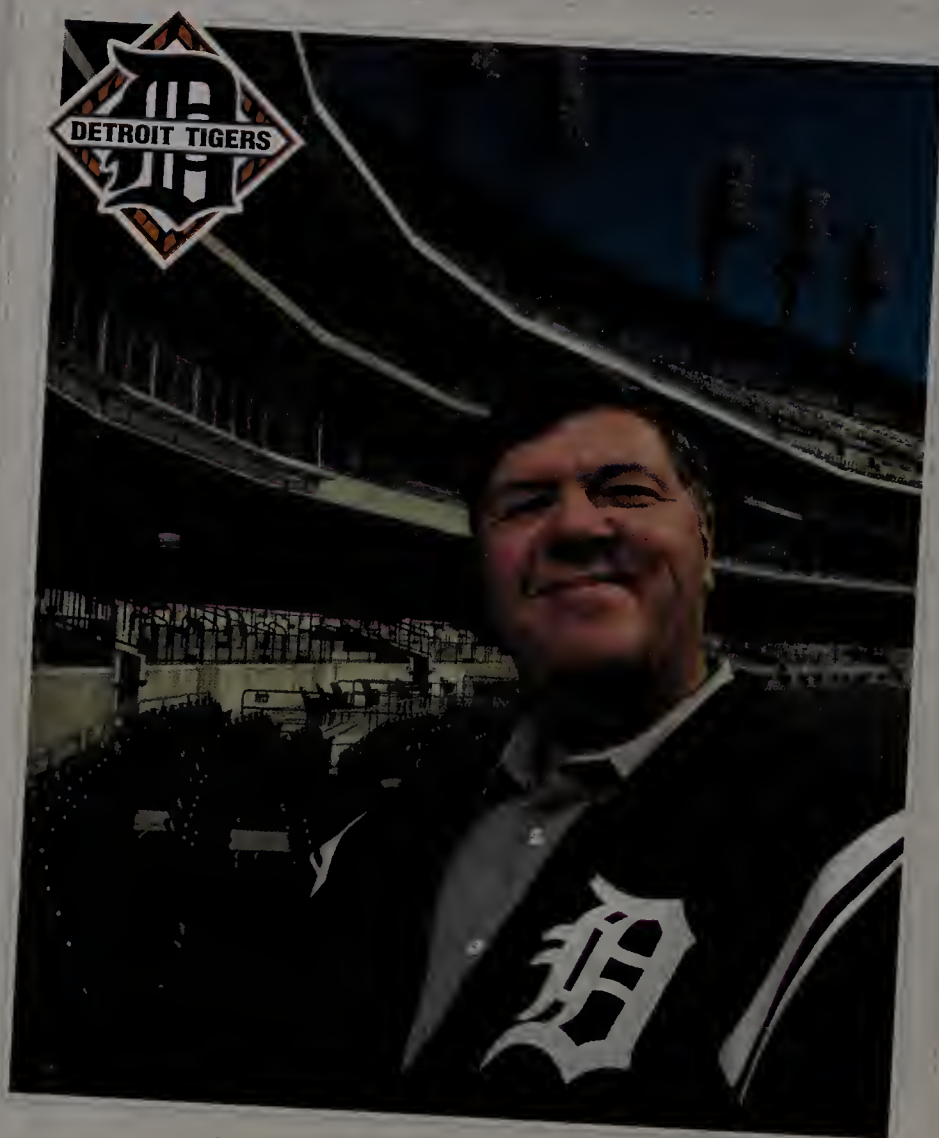
and concessions. R&D means finding talented players who then become inventory. There's payroll, of course. That includes 1,500 stadium workers for home games, and just-in-time inventory for hot dogs, beer and other concessions.

"If you look at all the things going on in baseball and treat them like a standard IT guy would, you have knowledge management issues and storage issues and data processing issues and data quality issues," Stewart says.

Data quality presents huge issues in baseball, a.k.a. statistics heaven: Every pitch is recorded and analyzed. But having data and trusting it are two different things. The data, purchased from sources such as Inside Edge, often does not map with scouts' impressions developed during the three to five years an average player spends in the minor leagues. In the future, Stewart wants to create trusted data on Tigers' players, from raw prospect to star. For now, new manager Alan Trammell, a star shortstop when the team last won the World Series in 1984, will take road trips armed with a notebook computer and DVDs with everything that's available on rival teams, including digital video and spreadsheets on opposing pitcher and batter tendencies.

Stewart has developed a new interest in the game, and despite long hours (9 a.m. to whenever, especially when the team is at home), he says "it's gotta be the coolest IT job in the world."

Stewart's dedication has earned him fans. "He's one of the most amazing guys I've worked with," says Michael Smith, assistant to baseball operations for the Tigers. Smith says Stewart's work in figuring out new approaches to ticket sales (like using sales records to tailor multigame ticket packages for repeat customers) and thinking about better ways to analyze rival teams' players shows both short-term execution and long-term vision. One thing Stewart's already planned for: supporting the media crush that would cover the Tigers in the World Series. Long-suffering fans—Detroit's last winning season was a decade ago—hope he gets his chance. —Michael Fitzgerald



COLE STEWART
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OUTSOURCING STRATEGIESSM

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CIO Custom Publishing
- s4 Developing a Global
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The DFS Group

Global Sourcing Strategies and Solutions

Produced by:



BrainStorm Group's Outsourcing Strategies

*The official publication of
the Nearshore & Offshore Outsourcing Conference Series*

I am thrilled to introduce the inaugural issue of **Outsourcing Strategies**—an executive guide on Global Sourcing. As the demand for offshore sourcing enters the mainstream, selecting the right strategic partner has never been more critical and difficult. The number of solution providers touting “offshore” solutions and their advantages has risen dramatically. **Outsourcing Strategies** is dedicated to providing you with a global sourcing game plan, including insight to proven strategies being implemented by leading world-class organizations and insightful guidance from outsourcing “thought leaders.”

I hope that you'll find this guide, as well as our executive forums, to be a valuable resource as you look to formulate your global sourcing strategy and leverage the advantages of nearshore and offshore solutions for your own organization.

About the Nearshore & Offshore Outsourcing Conference Series

Produced by BrainStorm Group, the *Nearshore & Offshore Outsourcing Conference Series* serves IT and Business executives seeking an unbiased source of education, insight and expertise in order to ensure the success of their outsourcing initiatives. These two-day programs feature a strategic management perspective presented by the best and brightest industry luminaries, independent analysts and experienced practitioners from world class organizations.

Featuring keynote presentations from leading analyst/research firms such as Gartner, Forrester Research, the Yankee Group and others, the *Nearshore & Offshore Outsourcing Conferences* are the only industry forums dedicated to “Global Sourcing Strategies & Solutions.” Session topics will cover the benefits and issues to be considered when evaluating nearshore and offshore outsourcing alternatives.

I would like to thank the sponsors of both this publication and our Conferences for demonstrating their commitment to addressing the global sourcing challenges facing business today.



Best regards,

Gregg V. Rock
President and Founder
BrainStorm Group, Inc.
gvr@brainstorm-group.com



About BrainStorm Group

BrainStorm Group, Inc., a full service conference and event management company, based in Northboro, Mass., was founded in 1997 by Gregg V. Rock. BrainStorm Group's Executive Management Team has more than 75 years combined experience in the development, production and management of conferences and events for forward thinking executives. In addition to proprietary events, BrainStorm Group's EMS (Event Management Services) Division offers a set of integrated services in the areas of conference development and sponsorship, event marketing and management.



Nearshore & Offshore Outsourcing Conference 2003 Event Schedule

Chicago
April 22-23

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September 15-16

New York
October 27-28

Program Highlights

- Global Sourcing Trends & Forecast
- Launching a Successful Outsourcing Engagement
- Selecting Applications for Offshore Outsourcing
- Solution Providers: Selection and Evaluation Criteria
- Offshore: The Good, The Bad, and The Ugly
- The Emerging Global Market
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According to BrainStorm's "Global Sourcing Survey"

- 90% of companies surveyed state that nearshore and offshore resources will play a critical role in their e-business initiatives

73% of the dollars being allocated for outsourcing will be done on a nearshore/offshore basis

Interest remains high in the traditional areas of Application Development, Existing Application Maintenance, Application Integration, Desktop Systems and Support and Project Management

In addition, we're seeing the value proposition expanded to include Business Process Outsourcing (BPO), Enterprise Content Management (ECM) and more

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OUTSOURCING AT 14: OFFSHORE COMES OF AGE

By Tom Field

Happy birthday, outsourcing. This fall marks the 14th anniversary of Kodak's landmark 10-year, \$250 million IT outsourcing contract with IBM and its subcontractors—the watershed deal that ultimately legitimized the then-foreign notion of hiring outsiders to manage a company's IT assets.

At the time, Kodak's deal was met with scorn. Then-CIO Kathy Hudson distinctly recalls appearing before a conference group just a few months after signing the deal, and the reaction she got from the hostile crowd could be summed up in three words: "*How could you?*"

But, my, how *that* picture has changed.

Today outsourcing is an accepted component of almost any IT organization's business strategy—the value proposition was long ago proven—and the CIO mindset has evolved to mirror that of Hudson, whose historic outsourcing decision also could be summed up in three words: "*Why wouldn't you?*" (FYI, Hudson today is the well-regarded CEO of Brady Corporation.)

Which brings us to the present, where the big question no longer is "*Why* in the world would you outsource?" but rather "*Where* in the world should you outsource?"

Never have outsourcing customers had so many options. Outsourcing 10 years ago was like TV before cable. You basically had four channels to choose from: IBM, EDS, CSC or whatever else was available via UHF. Outsourcing now is like satellite TV, bringing customers dozens of viable options from all around the world. CIOs today can—and do—mix and match outsourcing vendors of all sizes, services and continents.

And while the concepts of offshore

and nearshore outsourcing no longer really need to be sold—CIOs have come to embrace the services and savings available outside the United States—the vastness of the marketplace and the volatility of our world combine to raise some new, serious questions for the prospective customer. Questions like these:

- Can the low-cost offshore service providers offer the same high-level business/technology services available from the big U.S. vendors?
- With all the tense hotspots in the world today, how does one ensure security and business continuity in a global outsourcing relationship?
- How does one develop, manage and sustain a diverse, offshore/nearshore outsourcing strategy?

These and other topical questions will be part of the agenda at the BrainStorm Group's Nearshore & Offshore Outsourcing Conference Series, which kicks off this year in Chicago from April 22-23. Sponsored by leading service providers, and led by some of the industry's top researchers, this conference provides an ideal forum to raise questions—and get answers—about today's top global outsourcing issues.

Clearly, after nearly 14 years of proven results, outsourcing has come of age as a viable business strategy. But with an expanding world of new global offerings, it's just as clear that as outsourcing enters its mid-teen years, there are plenty of growth opportunities ahead—for vendors and customers alike.

It's a great time to join the discussion.

Tom Field, an award-winning journalist and former executive editor of CIO magazine, is director of content development for CXO Media Inc.'s Custom Publishing group.

DEVELOPING A GLOBAL SOURCING STRATEGY

By Ian S. Hayes

Launched by innovators in the 1980s, propelled by programmer shortages in the 1990s and embraced as a much-needed source of cost savings in the current economy, global sourcing is taking mainstream IT organizations by storm.

Long a fixture in manufacturing, nearshore and offshore outsourcing allow companies to take advantage of lower salary structures and operating costs in other countries. Recent improvements in communications, tools and processes for managing distributed projects and skill levels reduce risks and overhead, making nearshore and offshore

sourcing of IT projects more attractive than ever. With adoption rates rapidly increasing, it is clear that global sourcing is here to stay.

But is your organization ready to capitalize on global sourcing's advantages?

A global sourcing strategy sets the standards for when, where, how and with whom your organization is going to source different categories of IT projects and functions. Choices include the internal IT organization, onsite consultants and local, nearshore and offshore development centers.

Continued on Page s12

Leverage the Outsourcing Alternative... recipes for outsourcing success

Partnering with any outsourcing provider offers myriad of challenges.

A bad choice can result in disaster. As one of the premier pioneers of outsourcing, TCS advises companies to identify up front the critical success factors and understand the potential pitfalls.

The right start—Make a firm commitment, avoiding never-ending transition.

"We knew we needed the most accurate representation of our needs and a detailed roadmap on how to address them. Working with TCS gave us both." Ralph Carlie, CIO and Vice President, Grange Insurance

Domain knowledge—With business processes becoming complex, your outsourcing partner's knowledge base should extend beyond technology.

"TCS presented not just an excellent, competent code alternative, but they also proved themselves to be an entity that understood helping other entities in our

business move toward their goals and objectives." Allan Cooper, CEO, Canadian Depository for Securities

Project transfer—Make sure your outsourcing partner has a solid methodology to guarantee a flawless transition.

"An important factor was having the TCS staff seamlessly integrated into the implementation team of DRCM employees and consultants." Anantha Padmanabhan, Director of Asset Management Systems, Dresdner RCM Global Investors, Inc.

Walk the talk—Hire a partner who can demonstrate the ability to accomplish your objectives.

"We visited their development centers in

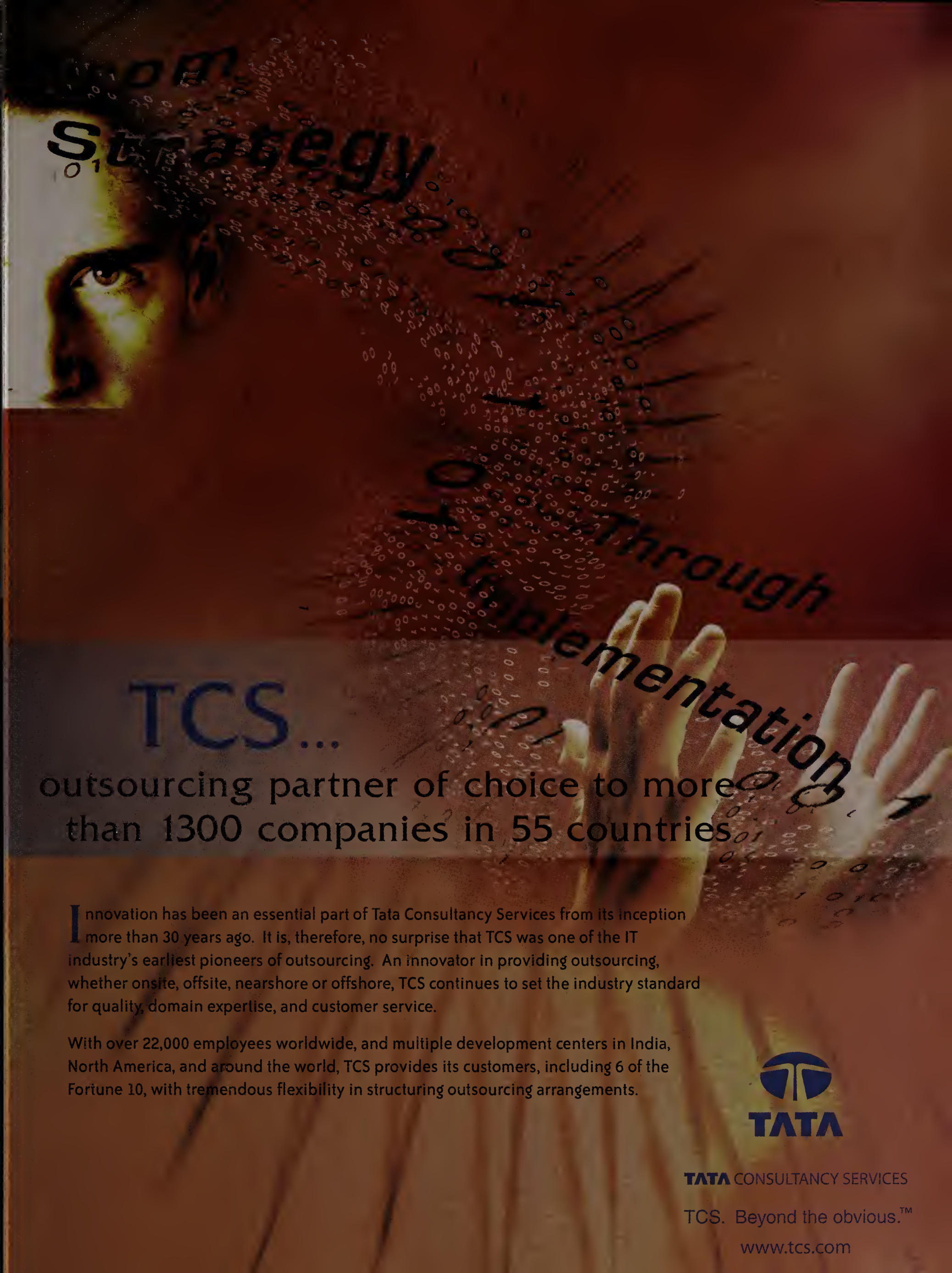
India. They gave us a tour, introduced us to their technical people, and we came back convinced they had the wherewithal to do what they said they would do." Alex Georgieff, Deputy Director, New Mexico Department of Labor



Quality—Companies that outsource are often searching for quality initiatives and want to move their projects into a Quality Assurance (QA) environment.

"TCS has effectively improved quality in our applications while simulta-

neously reducing support costs. This has largely been accomplished through the use of mature and innovative processes. The TCS offshore/onsite methodology works well and leverages SEI-CMM Level 5 processes to provide significant benefits." Gary Slavin, Vice President, AIG



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OFFSHORE SOURCING GOES MAINSTREAM IN 2003

By Rita Terdiman and Frances Karamouzis

As enterprises increasingly seek offshore sourcing options for cost-effective skill sets, large, traditional U.S. external service providers will be forced to aggressively pursue their own global delivery strategies.

Prediction: Enterprise Buyers View Offshore Services as a Mainstream Choice, Causing U.S.-Based External Service Providers to Accelerate Their Global Delivery Strategies

In 2003, Gartner predicts that global sourcing (nearshore and offshore) of IT services will move into the mainstream purchasing patterns (see Figure 1) of enterprise buyers (that is, the majority of enterprises will seek out global sourcing), and U.S. enterprises will exhort their employees to "Act Globally, Impact Locally."

By 2004, more than 80 percent of U.S. executive boardrooms will have discussed offshore sourcing and more than 40 percent of U.S. enterprises will have completed some type of pilot or will be sourcing IT services through a global delivery model, such as nearshore and offshore (0.7 probability).

By 2004, a select group of traditional U.S. ESPs will have successfully expanded their offshore and nearshore capabilities to effectively compete on price and execution capability in a global delivery model—a combination of on-site, onshore, nearshore and offshore (0.6 probability).

By 2004, more than 80 percent of U.S. executive boardrooms will have discussed offshore sourcing and more than 40 percent of U.S. enterprises will have completed some type of pilot or will be sourcing IT services through a global delivery model, such as nearshore and offshore (0.7 probability).

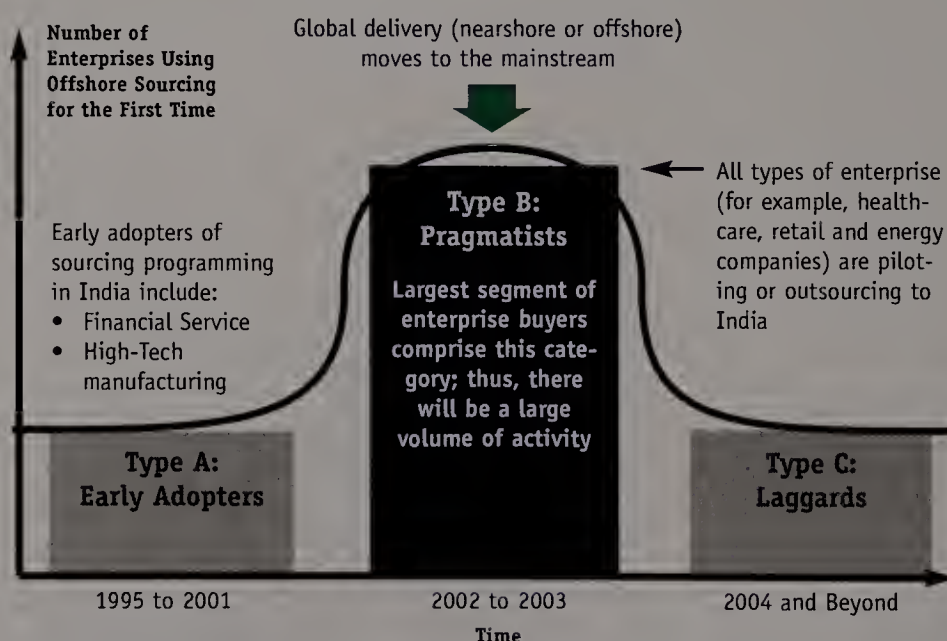
Impact on 2003:

Enterprises will increasingly incorporate offshore delivery into their sourcing strategies. Already, we see the broad adoption of offshore sourcing in key industries being driven from the top down, with aggressive targets, rapid ramp-ups and higher user expectations. This drive by enterprises toward offshore delivery implies that:

- Enterprises will demand that ESPs provide offshore capabilities to reduce the total cost of delivery or improve the return on investment.
- Offshore ESPs will increasingly be sent requests for proposals for application services from large enterprises and sourcing consultants.
- Select offshore ESPs will also be included on shortlists for other IT outsourcing services (for example, remote database administration).
- Total spending with offshore ESPs will steadily increase as established customers express their satisfaction with the quality, cost and emphasis on customer service they receive.

Figure 1

Adoption Curve of Global Delivery (Nearshore or Offshore) by U.S. Enterprise Buyers



Reacting in 2003:

The large, traditional U.S.-based ESPs will be forced to compete with offshore ESPs by providing global sourcing options (nearshore and offshore) to enterprise clients.

- Enterprise buyers should take advantage of moves that traditional U.S. ESPs will make to validate their positioning of being able to offer credible, competitive alternatives to offshore ESPs. Invite traditional U.S. ESPs as well as offshore ESPs to the competition and look at the options presented to get to the best combination of total offering (price, agility, service, quality, risk and delivery model).
- U.S. enterprises that are increasingly developing sourcing strategies, including some element of a global delivery model

Continued on Page s14

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TRANSFORMATIONAL OUTSOURCING AND INNOVATIVE CHANGE MANAGEMENT AT THE DFS GROUP

By Ron Glickman

The DFS Group is the leading retailer of luxury goods and general merchandise for international travelers. With thousands of employees worldwide, the retailer has several hundred stores in major cities and international airports throughout Asia, Mid-Pacific, Oceania, and North America. DFS has moved from multiple regional IT organizations to a single, global organization with a centralized IT vision and strategy, and a unified leadership team. The team reduced redundant resources and activities, fundamentally changing the way work is performed.

After Sept. 11, 2001, DFS and many other travel industry retailers experienced a dramatic slowdown in business. DFS needed to accelerate cost reductions and cope with increasing demand from corporate management to improve the speed

and quality of IT services. Additionally, DFS needed to focus its resources on its strength—global retailing—as opposed to IT processing. These objectives were accomplished through Project Chrysalis, where new methods for organizational change management and offshore sourcing were pioneered to deliver the desired business outcomes.

An important conceptual shift in Project Chrysalis was establishing a Community of Practice (COP). The COP is a group of firms with specific expertise that is directed by the DFS IT leadership team to contribute interdependently to deliver break-through results. DFS provides global retail expertise, strategic purpose, direction and core values. Other COP firms contribute their core competencies to deliver sus-

Continued on Page s12

Satyam Supports a Global 500 Company In More Than 40 Countries

Satyam's global reach and proven methodologies have benefited companies ranging from those just expanding internationally to the world's most prominent multinationals. Without exception, they need integrated IT solutions that comprise:

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- Customer service covering many continents
- Implementation, integration and support of multiple applications across technology platforms
- Business understanding of numerous vertical markets
- And often, complex e-business and e-commerce solutions.

Satyam provides IT services to many global enterprises, including one of the world's largest multinational companies. With Satyam, this customer has achieved

numerous successes such as:

- Keeping IT development and management costs in line through Satyam's dedicated offshore outsourcing centers & global development centers
- Mitigating risks by creating innovative business models
- Maximizing consistency and productivity by managing—from one location—multiple software languages and technology platforms, ranging from legacy applications to enterprise systems to Web solutions
- Reaching and servicing worldwide markets through innovative Internet tools, including extranets, customer databases and mining applications, and e-commerce Web sites

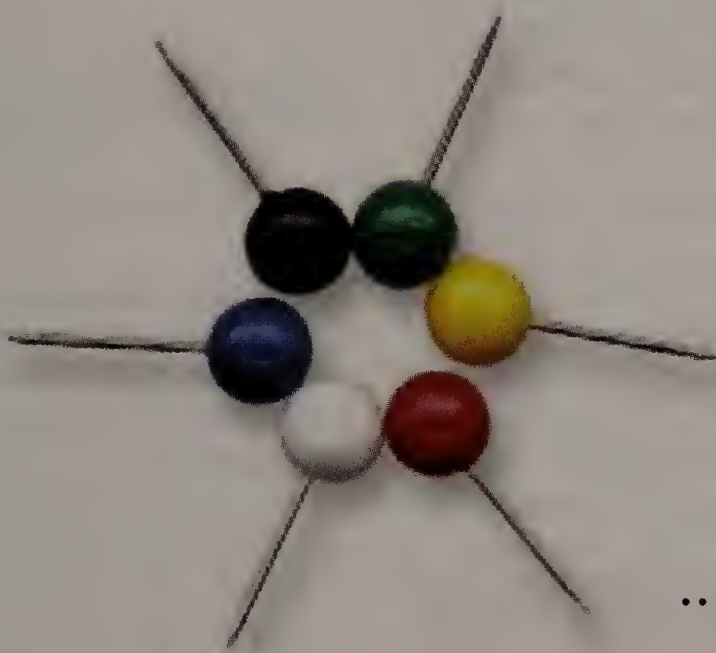
As companies strive to go global, an IT services provider is needed with international reach and capabilities. Satyam is that global partner. Satyam has more than 9,300 IT professionals working at 45 locations throughout the world. Satyam uses a



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What Business Demands

Continued from Page s4

Nearshore refers to development centers located in neighboring countries. For U.S. IT organizations, the most common choices are Canada and Mexico.

Offshore development centers may be located anywhere in the world, such as India, Russia, China, Egypt and Romania. Advantages and disadvantages vary considerably by country and service provider, but generally companies weigh factors such as geopolitical risk, travel effort and cultural affinities against access to pools of highly skilled people at significant cost savings.

Project characteristics and desired corporate benefits determine appropriate choices for a given assignment. A well-designed strategy strikes the optimum balance between delivery requirements, risk, cost and desired benefits. For example, if cost-saving is the prime objective, the strategy would shift as much work as possible offshore. A need for round-the-clock support may spread work across development centers in multiple countries. A highly interactive project may demand the involvement of the internal IT organization.

With literally hundreds of possible candidates, picking the right partner(s) is challenging. Although achieving cost-savings is often a critical driver, when evaluating candidates it is critical to note that lower rates do not necessarily translate into lower cost. More

important considerations are a firm's processes, productivity rates, ability to meet schedule commitments and quality of deliverables. These factors affect the overall project cost, and increase the value of the long-term benefits provided by its deliverables.

Global sourcing will never eliminate the need for corporate IT organizations. There are plenty of assignments best performed locally by company employees. However, global sourcing is a highly effective tool for lowering costs, gaining skilled resources and freeing internal staff for more strategic assignments. Shouldn't you have a strategy to take advantage of it?

Ian Hayes is the Nearshore & Offshore Outsourcing Conference Co-Chairman and the founder and president of Clarity Consulting, Inc. Ian actively advises Fortune 1000 companies and the solution providers that serve them on numerous IT issues, including outsourcing. Don't miss Ian's keynote at the upcoming Chicago conference being held April 22-23.



CLARITY CONSULTING, INC.

Continued from Page s10

tainable, competitive IT value at a cost and speed previously unachievable by The DFS Group alone.

Another conceptual shift was creating a Transformational Offshore Outsourcing methodology. DFS engaged Cognizant Technology Solutions, an Indian offshore service provider with roughly 70 percent of its staff based in India, to provide all mission-critical technology services for DFS. The selection of Cognizant was based on the following criteria:

1. Maturity and competition of IT service firms in India versus emerging economies.
2. Organizational agility and a customer-focused executive team.
3. World-class quality. (All development centers assessed at Capability Maturity Model Level 5).
4. 24/7 productivity achieved through a "follow the sun" delivery model.
5. Just-in-time human resource model delivering highly trained, cost-effective talent on demand.

Cognizant effectively makes thorny technology issues, such as integration, obsolescence and interoperability, invisible to the DFS IT customers.

Finally, a key success factor was the change management techniques introduced by The Quicksilver Group, the change management partner in the DFS COP. Quicksilver introduced new meeting processes, including visual mind mapping and brain surfing, that dramatically improved the COP thinking, learning and communicating capabilities. Visual mind mapping uses text, color and pictures to increase individual knowledge retention and effectiveness. Brain surfing combines

visual mind mapping and collaborative brainstorming techniques to improve the speed and quality of critical decisions.

Glickman stresses that it is essential to select the right partners, and to communicate the vision and plan throughout the enterprise for the duration of the project. The results speak for themselves. In less than one year, DFS consolidated 10 global data centers to a single facility in Singapore, moved support for 5 million lines of legacy code in 10 countries to a single Cognizant operation in India, and reduced annual IT operating expense by 35 percent. Project Chrysalis featured IT vision and innovation that helped this global retailer take its Community of Practice to new levels of IT productivity and value.

Ron Glickman has 25 years of experience in the retail sector. He joined The DFS Group, a subsidiary of LVMH, Moët Hennessy—Louis Vuitton, in October 1999 from Dairy Farm Hong Kong, where he was CIO of a multinational retail chain. Ron continues to lead the DFS Community of Practice in the creation of intellectual capital and the delivery of breakthrough results.



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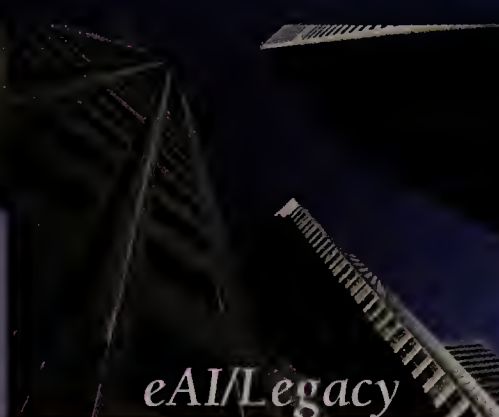
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The success of business integration projects hinge on resolving business oriented issues in addition to solving technical problems. Understanding which strategies offer the greatest potential for success is just as important as knowing which vendors provide the best solutions.

Historically, integration solutions have leveraged integration tools to connect systems and data internally. Business process management and integration (BPM/BPI) are enabling collaboration internally and between business partners.

Web services are beginning to deliver increased flexibility to traditional integration solutions while providing access to a wide range of services. Collectively, these integration options allow an enterprise to integrate legacy and business applications, data and processes across the extended value chain. Understanding the relationship between data, systems, business processes and services-based integration along with their respective strengths and weaknesses is crucial to effective integration deployment.

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Continued from Page s6

- (combination of on-site, onshore, nearshore and offshore), will struggle because there will be continued market confusion about the differentiation between various ESPs.
- U.S. enterprises will increase their demand for other types of service offerings beyond application related service (for example, application development and application outsourcing). The most dramatic increase will be the area of packaged application services (for example, those from Oracle, SAP, PeopleSoft and Siebel Systems), which include technical deployment and managed services.

Rita Terdiman is a vice president and research director in Gartner Research. Prior to joining Gartner, Ms. Terdiman was employed with Citicorp, where she was vice president in the corporate technology office and ran a business solutions group for the corporate bank.

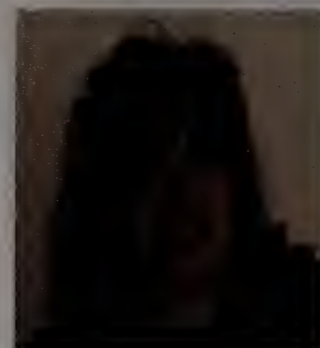


Other areas, such as business process outsourcing, will also experience growth.

Bottom Line:

In 2003, the majority of U.S. enterprises will see global sourcing services (nearshore and offshore) as a mainstream alternative. They will demand low-cost services from ESPs with a proven global "virtual" delivery model. This change in buying behavior will change the sourcing landscape, with new vendors gaining market share and established global ESPs modifying their delivery models.

Frances Karamouzis is a research director focusing on strategic Sourcing of services in Gartner Inc.'s research and advisory services. Within this group, Ms. Karamouzis focuses on the service-delivery capabilities of large and small professional services firms. She provides research, analysis, and advice to clients who are in various phases of the decision and management life cycle.



Don't miss Gartner's keynote address at each of the upcoming Nearshore & Offshore Outsourcing Conferences.

Profit Acceleration: A Case Study in Offshore Outsourcing

Praxid, a leading provider of ERP, CRM, SCM, Financial Management, and HRM solutions for small to mid-sized enterprises, faced challenges similar to the majority of private and public, ISVs in today's business environment. Contracting IT spending, timid capital markets, and a market overcrowded with software solutions foretold the certain demise of companies unwilling, or unable to fundamentally change their operating models. Praxid addressed these challenges of change head on and was unwilling to sacrifice innovation, product quality, and customer satisfaction in the process.

Praxid will present this case study at the **Nearshore & Offshore Outsourcing**

Conference in Chicago (April 22-23) as a guest of SeaBlue Technologies. The presentation will discuss the new rules of Wall Street that dictated operational and financial change, the search for a sourcing partner, the offshore migration, and the expected benefits. The presentation will highlight the opportunity for accelerating Praxid profitability through the SeaBlue Shared Service Networks.

About SeaBlue Technologies, Inc.

SeaBlue is focused on one thing, 100% of the time: helping IT enterprises maximize current technology investments to accelerate recovery

SeaBlue
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and recapture momentum. As software experts, we know how to effectively and efficiently transform IT enterprises to a mobile, globally distributed, team-based structure. SeaBlue's deep capabilities set includes professional services, product support and GlobalSourcing™. Further information about SeaBlue Technologies, Inc. can be found at www.seablue.com.

Managing in a Recovery through the Offshore Value Advantage™



Simple cost management, trimming of excesses and watching the bottom line will not lead to growth. SeaBlue realizes that managing in the recovery means using current technology to recapture momentum. We will work with you to link IT to business performance and provide you with the means to deal with the recession's persistent effects during the recovery.

We call it the Offshore Value Advantage with Professional Services, Product Support, Outsourcing and Process Management as the underpinning framework for the delivery of offshore technology and IT-enabled services to the enterprise.

Visit us online at www.SeaBlue.com to download your free copy of the "Managing in a Recovery through the Offshore Value Advantage"™ white paper and stop by our Keynote on April 22, 2003 at the Nearshore & Offshore Outsourcing Conference in Chicago as we define the future of sourcing strategies.

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IONA's technology is a key element of BearingPoint's Strategic Integration Architecture. And IONA is a founding partner in BearingPoint's Global Web Services Center of Excellence, which provides an interactive demonstration and collaboration environment for partners to showcase their products and services.

To learn more about how BearingPoint and IONA can help you leverage Web Services to increase your operational agility, return on investment and profitability, download the BearingPoint/IONA white paper at www.bearingpoint.com/ws_iona.



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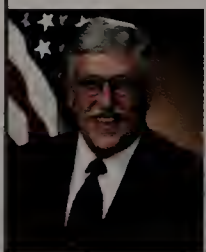
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On the Move

By Meredith Levinson

Show Me the Money



ARTHUR MONEY (left) can't seem to keep himself busy enough. After retiring from his position as CIO of the Department of Defense in April 2001, he started his own consultancy—ALM Consulting—

that same month. He still serves as its president. In September 2002, Money joined the board of Irvine, Calif.-based information security vendor Rainbow Technologies. By November, he had also accepted a seat on the board of directors of CACI International, an IT services company in Arlington, Va.

That's not all. A month and a half later, Terremark Worldwide tapped Money to lead its data center builder and operators' government division. Also in January, Money accepted an offer to serve as chairman of the board for Systems Research & Development, a data warehousing and security analysis software provider in Las Vegas. Within days of that appointment, optical solutions developer Essex of Columbia, Md., elected him to serve on its board of directors. January was indeed a banner month for Money.

Two other former Pentagon CIOs have also accepted positions with technology companies. **Dan Porter**, former CIO of the Department of the Navy, joined Reston, Va.-based IT services company Vredenburg as

senior vice president of strategic development. EMS Technologies, an Atlanta-based wireless defense contractor, has named **John L. Woodward Jr.** (left), former deputy CIO for the Air Force, to its board of directors.



Women Moving Up

Men still dominate the business world. And while some say the reality of women in IT may be dim, there are some bright

spots. **Cecilia Claudio**, former senior vice president and CIO of Farmer's Insurance (see "Get on Board," at www.cio.com/printlinks), left the Los Angeles-based company in February to head up IT for Europe, Asia and Africa for Farmers' parent company, Zurich Financial Services.

Universal Access Global Holdings recently named **Annette Erdmann** as its CIO. **Deborah Freedman**, president and CTO of BellSouth Technology Services, has joined Evolve Software's board. **Jeri L. Lose**, vice president of IT and CIO at St. Jude Medical, has joined the board of

Apria Healthcare Group.

Marian M. Lucia is the new senior vice president and CIO of The Federal Home Loan Bank of Atlanta. She previously worked for Prudential Financial and Prudential Investments. Also in the financial world, **Kelly L. Briggs** joined Western Sierra Bancorp as vice president and CIO.

Darden Restaurants, which owns and operates the Red Lobster, Olive Garden, Bahama Breeze and Smokey Bones BBQ Sports Bar chains, promoted **Linda Dimopoulos** to CFO. She was previously the Orlando-based company's senior vice president and CIO. Last but not least, **Ursula Conway**, vice president of IT at Ameristar Casinos, has become the company's first CIO. You go girls!

PROFILE: JONES'S NEXT ADVENTURE

WHEN RECRUITERS CALL CIO superstar **Dennis Jones**, he insists he's done working full time for corporate America. "I don't use the word *retired*," says the 50-year-old Jones (right). "I'm *self-directed*."

Just two heady years ago, Jones became the president of Commerce One. Everyone watched as the former FedEx IT chief put his noggin to the task of growing the beleaguered B2B provider (see "Dennis Jones's Big Adventure," at www.cio.com/printlinks). A year later, Jones resigned amidst another round of cutbacks at the Pleasanton, Calif.-based Commerce One.

Now he's back home in Memphis, where he spends time with his cocker spaniel Freckles. In his spare time, he's on the board of StorageTek, a \$2 billion digital storage company based in Louisville, Colo. He's also cooking up a nonprofit organization—the Friends and Faith Foundation—that will use tax-exempt bonds and tax credits to purchase affordable housing. Any profits will be siphoned into social organizations. The group of Memphis businesspeople involved in the project hopes to start purchasing real estate sometime this year.

Jones is adjusting to the slower pace. "It is a transition that you have to manage," he says. "You have to accept the fact that you do have more time on your hands and a greater degree of flexibility, and you don't have to be as hurried. I'm very satisfied and appreciative of the business career that I've had, and I feel like this is a time to give back my time and experience." And if the right job offer came along—would he take it? Perhaps, he admits, but only if it was an extraordinary offer.

—Sarah D. Scalet



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THIS DOOR IS DIFFICULT TO OPEN.**

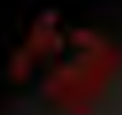
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It's easier to take control.

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Court Stops Piling Papers

SOME SITUATIONS are ripe for automation. But that doesn't mean all users are ready to embrace it.

Before 1998, the Miami-Dade County Clerk of Courts was a paper skyscraper, annually dealing with 500,000 cases and 2 million attendant documents. The typical traffic citation would be handled 37 times. Each citation would attract more documents (arrest records, pleadings, court motions). Updates were keyed and rekeyed into the clerk's databases. And each court day, county employees would have to dig out and lug heavy file-filled boxes to one of 21 traffic courtrooms.

So the clerk's office (along with the 11th Judicial Circuit Court and the Miami-Dade County government) spent \$18 million on an image-based document-management system from FileNet of Costa Mesa, Calif. The system, which Accenture consultants helped implement, scans incoming documents, and each case gets its own electronic file.

But while court workers were keen to learn the new system, the traffic judges didn't like it.

"Some judges thought we were just trying to get them to do the courtroom clerk's job," says Thomas James, CIO of Miami-Dade Clerk of Courts. "Some thought the new system would slow them down. Some thought the presence of a PC monitor on the bench would inhibit their ability to have eye contact with people and that they'd lose control of their courtroom."

To win judicial acceptance, the project leaders provided the judges with three weeks of individual training and a system that wouldn't slow them down. "If we had not been successful in providing a responsive system, it would never have been accepted by the judges. Speed came to be the primary issue," James says. The system also allows a judge's clerk to take control.

Since implementation at the end of 1999, the court has started to save \$1 million a year (staff was reduced by 15 percent and overtime costs were cut in half) and has increased traffic fee collection by 60 percent. James says the office now has about 3,500 more square feet of storage space.

Next: e-traffic tickets. A pilot project underway allows the clerk's office to receive electronic citations issued by the Florida Highway Patrol. The clerk's office awaits approval to enable citizens to pay for traffic citations online. And no need to see a judge.

—Stephanie Overby

This Date in IT History

April



3

IBM unveils its first laptop in **1986**.

The IBM 541, or PC Convertible, costs \$2,000 and

offers 256K memory, an Intel 8088 processor and dual 3.5-inch floppy drives. Naturally, the PC Convertible leaves its impression on the lap of many-a-user: It's a 12-pound clunker the size of a briefcase.

4

Search engine **Excite** debuts on the Nasdaq stock market in **1996**, opening at \$17. If you had invested \$1,700 in 100 shares of Excite at IPO time, it would yield zero dollars today. Excite, which reached \$187 per share in 1999, would embark on a \$6.7 billion merger to become Excite@Home in 1999 but then go bankrupt in 2001. AT&T would comb through the broken pieces, pocketing the remains of Excite@Home for a measly \$307 million.

6

Intelsat 1, a.k.a. Early Bird, rockets into space in **1965** becoming the first commercial communications satellite put into orbit. Today, 2,774 satellites, both commercial and government, orbit the Earth as well as countless amounts of stellar debris.

9



In **1997**, Douglas Engelbart wins the Lemelson-MIT prize along with \$500,000 for his

invention of the mouse (his original, above) 29 years earlier. Engelbart had demo'd his inventions—the GUI and the mouse—in 1968. It wouldn't be until 1984 with the point-and-click composition of the Macintosh that Engelbart's visions are put into use.

12

Highly anticipated **Yahoo** stock opens on the market in **1996**. The stock IPOs at \$13, opens at \$24.50 and closes the day at \$33. If you had

invested \$450 in 100 shares of Yahoo at IPO, it would now be worth \$22,800. Yahoo!



14

Twenty-one-year-old **David Sarnoff** (left), the future chairman of RCA and founder of

NBC, picks up the distress call of the *Titanic* in **1912**. Sarnoff stays his post and relays wireless messages for 72 hours, collecting names of survivors (mostly women and children) for frantic families.

15

Microsoft confirms in **1991** that the FTC has launched an antitrust investigation against it. Unfortunately, the Redmond juggernaut had not developed litigation-forecasting software to forewarn of the barrage of antitrust activity that would follow.

27



Portrait painter turned inventor **Samuel Morse** is born in Charlestown, Mass., in **1791**. Morse would develop light-

ning wires and Morse code, an electronic alphabet. The first message was sent from Baltimore to Washington, D.C., in 1844. It read "What hath God wrought!" A coast-to-coast line was ready in 1861.

30

Geneva-based particle physics lab **CERN** releases a legendary document in **1992**, declaring that the World Wide Web, developed by CERN scientist Tim Berners-Lee, would be free to all, with no royalties due to the lab. Yahoo.

—Daniel J. Horgan

SOURCES: BROWN UNIVERSITY, CERN, COMPUTER CLOSET, CNN, GREAT WEST NEWSPAPER, NASA LIBRARY, NATIONAL INVENTORS HALL OF FAME, NBNET, SILICONVALLEY.INTERNET.COM, THE HISTORY CHANNEL, THE MISSION AND SPACECRAFT LIBRARY, WEBSEARCH.COM, GOLDMAN SACHS, THOMAS HYLAND, BIGCHARTS.COM

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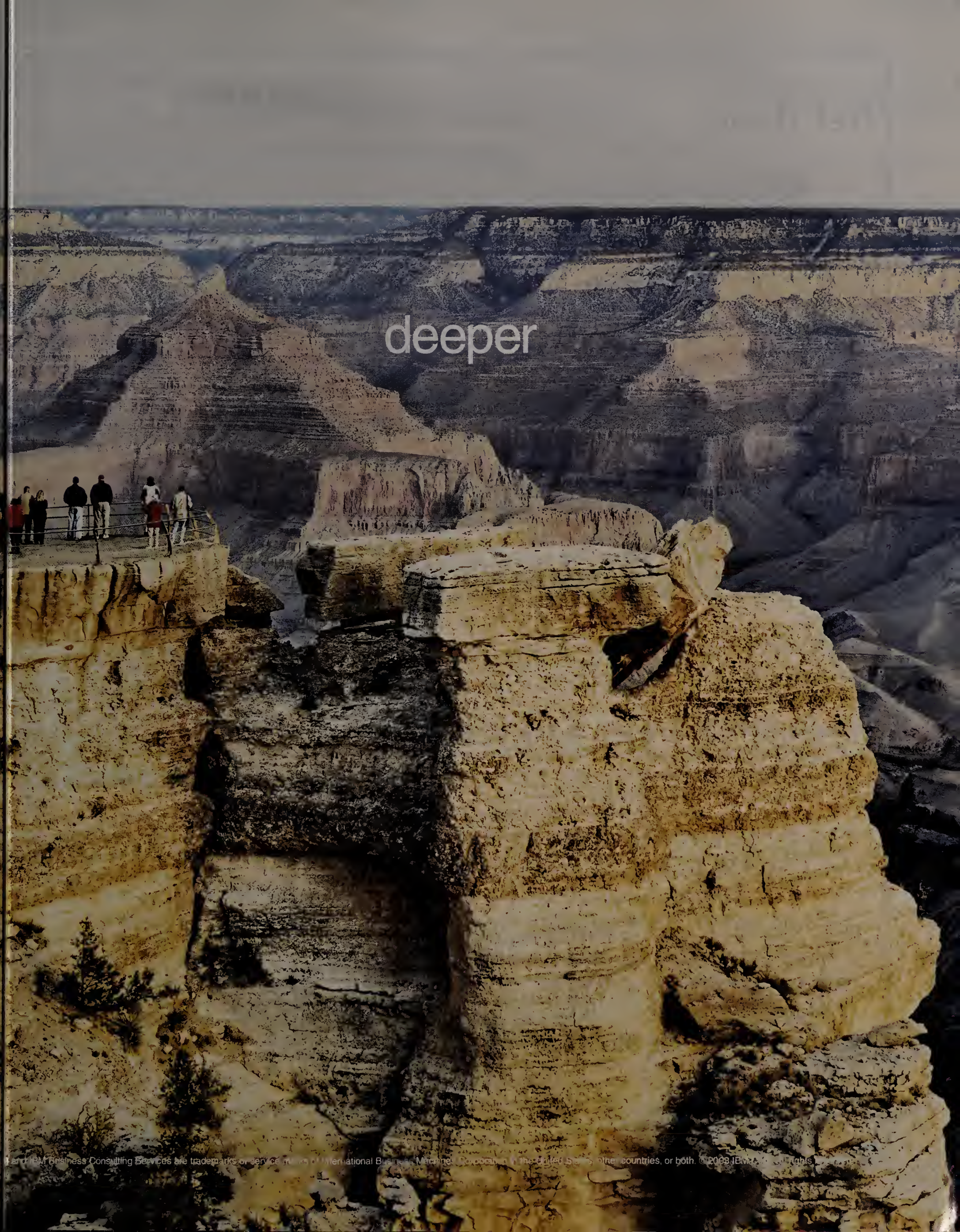
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Net Gains

Creating Value Through IT

Decouple and Conquer

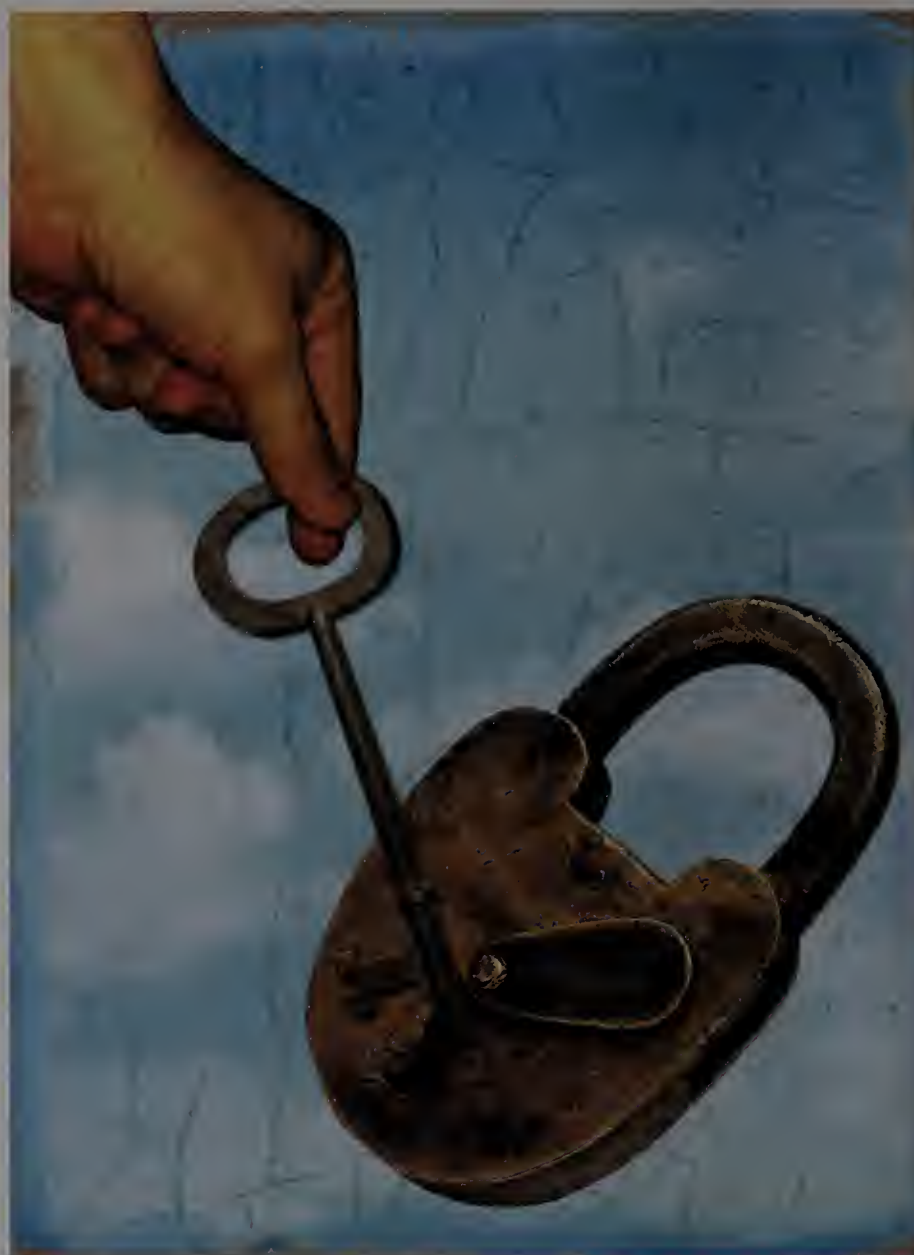
Unlock value by using the Internet to divide your company

BY MOHANBIR SAWHNEY

WHEN WE THINK ABOUT how the Internet creates value, we naturally think about its power to connect. That's how we define a network like the Internet: computer systems linked in a way that makes it easier to share information.

What is less obvious is the power of the Internet to create value by decoupling different types of systems, business processes and companies, enabling organizations to use their resources most effectively. The Internet allows IT infrastructure to be decoupled from front-end applications so that systems can be agile and responsive at the applications level, yet be robust and scalable at the infrastructure level. At the business process level, the Internet allows back-office operations to be decoupled from front-end activities so that companies can share common services while moving customer-facing activities closer to customers. And by decoupling different stages of the industry value chain, the Internet allows companies to focus on what they do best while outsourcing the rest to a network of partners.

Yes, the Internet connects. But it also separates. By understanding the power of decoupling, you can find dramatic new possibilities for creating value.



Break Free of Compromises

To understand how decoupling reduces the need for compromises when designing IT systems, consider the difference between desktop computing and network-centric computing. On the desktop, all functions are colocated—with storage, processing, display and applications all in one place. This collocation involves a hidden compromise. You want your computer to be small, flexible and adaptable—in a word, personal. However, you want it to be powerful, have lots of memory and be highly reliable—more like a mainframe. You get something that's neither as powerful as a mainframe nor as customized as an information appliance that does only one thing.

If we introduce a network such as the Internet into the picture, the value of IT changes dramatically. Now you can move the mainframe-like functions of the computer to a central server that is powerful, reliable and scalable, while allowing the

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PC-like functions—such as displaying information on a monitor and taking user input through a keyboard and mouse—to stay close to the user. By separating the back-end infrastructure functions that best belong on a large server from the front-end functions that best belong on the client device, the Internet breaks the design compromise inherent in colocation.

In fact, infrastructure-like functions can be delivered over a pipe—just like water, electricity and natural gas. This is the

The Internet lets companies resolve the age-old debate of centralization versus decentralization.

essence of the “utility computing” idea that IBM and other vendors are so excited about. A paradox of the utility computing paradigm is that infrastructure will become more centralized, while devices and user applications will become more decentralized. I foresee the emergence of a few information utility companies that will supply IT infrastructure, and the creation of billions of highly focused information appliances for end users.

Extract Value from Business Processes

The decoupling logic also applies to the design of business processes. For decades, companies have struggled to find the right balance between centralization and decentralization of their operations. Centralization allows for better economies of scale and better coordination of activities across a company. But it also makes companies less responsive to their customers.

To see how decoupling can help resolve this dilemma, think about how a company's activities can be classified into those that are close to customers and markets (such as sales, solutions design and customer relationship management), and those that provide back-end support (such as IT networks, call centers and accounting). The Internet lets companies centralize the back-end activities into a shared services organization that benefits from economies of scale while allowing front-end activities to be more decentralized and closer to customers.

Consider how General Electric is taking advantage of decoupling as it redesigns its global processes for GE Capital International Services (GECIS), which is based in India. GECIS provides 15 of the top GE businesses with services that include accounting, business analytics and software development. GECIS allows GE companies to manage their front-end activities closer to their markets while benefiting from improved scale and lower labor costs at the India-based back-end operations.

Decouple Value Chains

Decoupling is also reshaping the way companies decide the scope of their activities within the industry value chain. In the days of

General Motors chief Alfred Sloan, companies believed that competitive advantage was gained through vertical integration. But it is difficult to be good at all activities in the value chain. It makes sense for companies to focus on what they do best and to outsource the rest. But if you cannot communicate effectively with partners and suppliers, the benefits of specialization are diluted because of the cost of coordinating activities across companies.

With the Internet, companies no longer need to compromise between specialization and integration. By reducing the cost of interaction between companies and their partners, the Internet allows companies to limit their operations to what they do best and to outsource noncore activities. For example, the PDA company

Handspring outsources product design, manufacturing, distribution and support. Through decoupling, the Internet allows companies to benefit from virtual integration.

Putting Decoupling to Work

To exploit the power of decoupling in your company, ask yourself the following sets of questions.

1. Systems design. To what extent is your back-end IT infrastructure separated from the front-end end user applications? Is your IT architecture flexible, with clear separation between the data, business logic layers and presentation layers?

2. Business process design. To what extent has your company separated the back-office service and support processes from the front-end customer-facing processes? Have you created shared services operations across the company? To what extent have you moved these shared services to low-cost locations?

3. Business scope design. Do you understand the difference between the core activities that your company is good at and considers key to its competitive advantage and the noncore activities that somebody else can do better? How many noncore activities have you outsourced? How well can you manage out-sourcers without compromising quality?

The Internet allows companies to resolve age-old debates between specialization and generalization, centralization and decentralization, and scale versus focus through its ability to decouple systems, processes and companies. If you understand the power of decoupling, you can go beyond these seemingly irreconcilable dichotomies that constrain your thinking, and you can unlock new value for your company. **CIO**

Has the Internet helped you decouple business processes? Write us at netgains@cio.com. Mohanbir Sawhney is the McCormick Tribune Professor of Technology at Northwestern University's Kellogg School of Management. Reach him at mohans@kellogg.northwestern.edu.



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Vol.1, No.1

Need a Second Opinion? Consider Enterasys

In evaluating the enterprise networking landscape, Mark Fabbi from Gartner suggests that CIOs should "competitively bid on major infrastructure upgrades." In fact, he estimates that, simply by seeking competitive bids, Global 2000 companies can save at least 15 percent on the cost of these upgrades.

But price is not the sole reason to broaden the vendor evaluation process. Fabbi adds, "There are a number of viable alternatives, and enterprises are encouraged to evaluate their requirements and not blindly follow market hype." Among his alternatives: Enterasys Networks.

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"A return to competitive bidding will save the average Global 2000 enterprise at least 15 percent, representing millions of dollars..."

—Mark Fabbi, VP, Gartner Research

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CXO Perspectives

Getting the Twain to Meet

A Merrill Lynch CFO offers four tried-and-true tools for establishing common business and technology goals

BY MARVIN BALLIET

WHETHER YOU ARE the CIO of an entire corporation or the CIO of a company division, the perception of technology and your role as a provider of technology services has changed dramatically since the spring of 2001. Gone are the days when the technologist was viewed as the transformer of the business model, when the question was not whether one should spend on innovation (of course!), but whether one was spending enough to ensure timely delivery. Current questions about return on investment and value have changed not only the approach toward technology investment decisions but also the formula for a CIO's career success.

As CFO for the Global Technology & Services Group at Merrill Lynch, which includes technology, operations, real estate and general services, I have a unique perspective as both a provider and user of technology services. In fact, I was given the role of CFO for Global Technology in 1999 because I had been one of the most vocal critics of technology as the CFO of fixed income trading. I have observed the role of the division CTO evolve from manager of an overhead cost organization in the mid-1990s, to a business initiator between 1998 and mid-2001,



and eventually into the current role—in this period of austerity—as an efficient enabler of business capabilities. (At Merrill Lynch, CTOs function as both CIOs and CTOs.)

Those role changes were a direct result of the misconceptions regarding technology during the period of exuberance from 1998 to spring 2001. During that time, decisions to increase distributed computing and broadband capacity, and events such as Y2K, the appearance of the Euro and the dotcom craze fueled the massive increases in technology investments across all industries. Those increases, however, were not always driven by sound business decisions. They were driven by fear in business executives: fear of noncompliance, fear of social meltdown that seemed to surround Y2K, fear of loss of market share, fear of lower revenue growth. At that time, investors rewarded companies spending on new technology with higher market capitalization values even if the bottom-line returns on the investments were not clear. “Don’t

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be left behind” became the mantra around most investment decisions. That all changed when the dotcom bubble burst, resulting in a new focus around efficiency and alignment with business profitability and objectives.

These days, I seldom hear the business and technology sides debating over the need for a wireless strategy based on the latest technology capability or marathon sessions evaluating what vendor’s B2B solution must be immediately implemented. Dis-

The formula for technology success is the development of common strategic goals for both business and technology that increase competitiveness, grow revenue and lower costs—while managing risk.

cussions are now concentrated on meeting client service needs and improving earnings while managing risks. I must say, however, that in no way diminishes the importance of continued innovation and new functionalities. The question to answer now is whether the new innovations and functionalities fit into a company’s business strategy with an acceptable rate of return.

Establishing the Common Ground

The formula for technology success is the development of common strategic goals for both business and technology that center around increasing competitiveness, growing revenue, lowering costs, and maintaining speed to market and quality service—while managing the business and technology risks. The keys to this formula are:

Business ownership of technology investments to ensure consistency with the business unit’s objectives. Technology has lost its mystique—in a good way—so that now business managers can see it as one of many ingredients that is available to them to create the right processes and structures to maximize profitability.

Clear communication of the common strategic goals through all levels of the business and technology organizations. Unless the objectives reach all levels of your organization and become part of the daily decision-making process, delivery will fall short of expectations.

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Ability to react in a timely manner to changing market conditions that affect anticipated returns from technology projects. Technology decisions and expectations must be periodically reviewed to ensure that returns are acceptable.

The Tools of the Common Ground

At Merrill Lynch, we have developed a number of tools during the past few years to help drive the establishment of and timely adjustments to our common business and technology goals. Those tools include:

IT portfolio management. Each business owns and manages its portfolio of technology investments and constantly rebalances the portfolio to meet its business goals and anticipated impact on the business’s bottom line. For example, at Merrill Lynch, we were seeing significant

volume growth on the Nasdaq during the dotcom era and were progressing with IT initiatives to meet that demand. When the bubble burst, the business quickly shifted that technology investment to the fixed income business where the technology ROI was much higher.

IT portfolio management comprises:

- Infrastructure
- “Lights on” application maintenance
- Regulatory and mandated initiatives
- Existing application enhancements
- Strategic investments

The overall goal is to lower the total size of the portfolio over time while maximizing the strategic investment of the portfolio. We use a Web-based application called Business Engine Network (BEN), from San Francisco-based Business Engine, for technology portfolio management. This tool integrates financial and portfolio planning as well as project and resource management with delivery and financial performance. BEN can be thought of as the ERP solution for the IT factory.

Cost transparency. We have closely aligned technology organizations with the businesses they support. For instance, the business unit’s technologists are included in the unit’s headcount, and those technologists have a dual-reporting relationship: both to the global CTO and to business management. Additionally, core infrastructure service charges have been established based on actual drivers of costs and service levels—we charge our data center back to the business units that obtain actual benefits from it. For example, we charge back long-distance usage to the individuals who make the telephone calls. Those changes have created an understanding by business managers of the impact of their decisions on business profitability.

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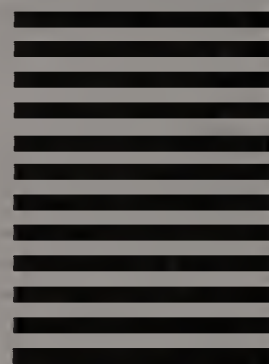
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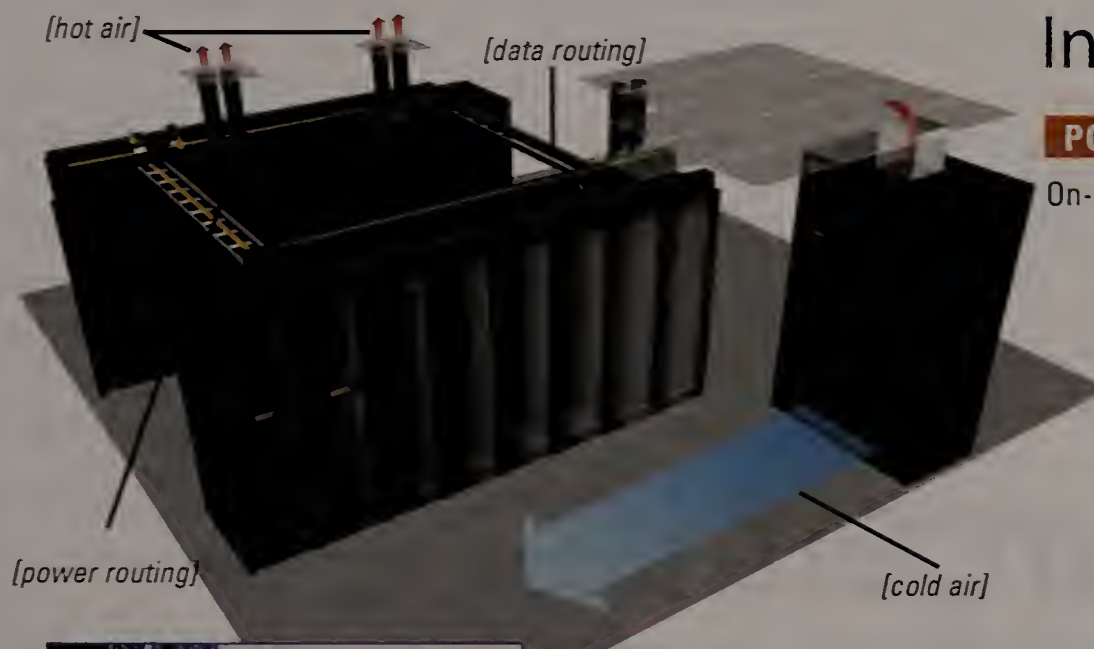
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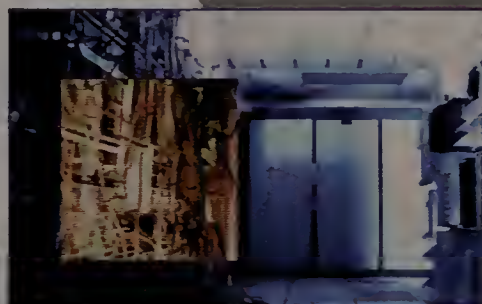
In times like these, it pays to think smart. For more information on InfraStruXure's open, adaptable, integrated approach to network-critical physical infrastructure, visit us online today at www.apc.com.



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High power densities can create hot spots, which cause equipment failures and expensive downtime.

InfraStruXure's advanced cooling components help remove heat from your servers and target air circulation where it is most needed.

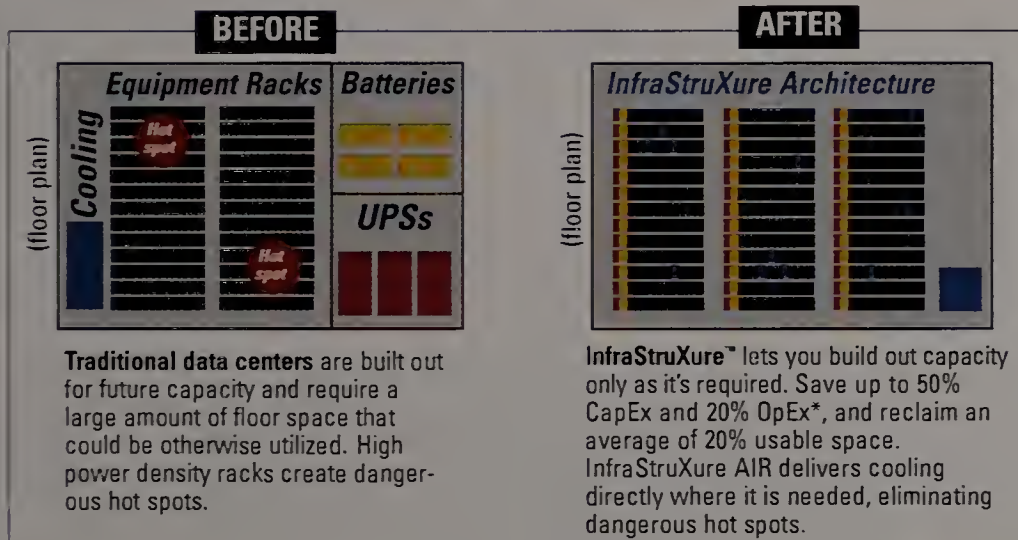
Air components designed for InfraStruXure™ are manageable via network technology, and feature a modern, reliable design with fewer moving parts.

"Our Video on Demand (VOD) servers are air cooled from front to back. The APC racks that house the InfraStruXure are also designed to cool from front to back. So the same racks can effectively house our power system and our servers."

Vince Pombo
Vice President of Engineering
Rich Flanders
Director of Engineering
Time Warner Cable

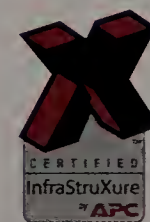
"If I had purchased the incumbent vendor's 3-phase upgrade model, I would have paid 75% more in service costs over the next four years and I would have had to utilize 50% more of my precious floor space."

Captain Timothy Riley
Support Services Division
City of Newport Beach Police Department



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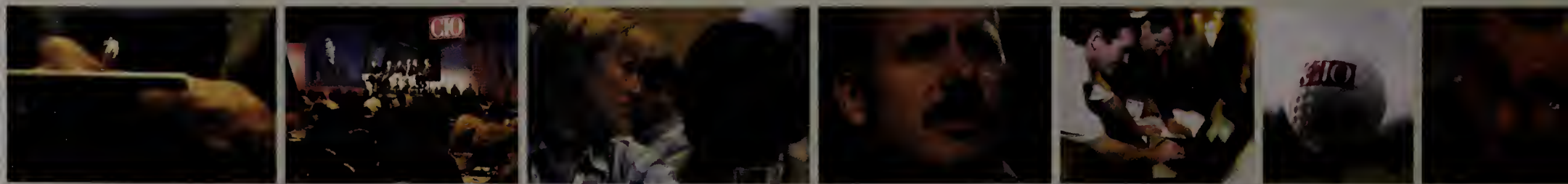
The Resourceful Enterprise

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—Gary Leek, CTO, Autobytel

The knowledge of which IT costs are controllable has forged partnerships between business and technology to reduce lower value services and fund strategic initiatives.

IT performance measurement. Each business's ability to balance efficiency, flexibility and control determines its success. Merrill Lynch's technology metrics program measures service delivery and cost efficiency, evaluates vendor and staffing flexibility, and controls project delivery and costs. For example, all our technologists and CTOs compile a scorecard on strategic vendor relationships. Semiannually, we evaluate each vendor's performance based on service delivery, price and procurement process, technology forefront, and willingness to form strategic alliances. The vendor is then issued a grade from A to F in each of these quadrants, and the scores are used to make an assessment of continued alliances. The process ensures that each technologist knows the priorities of business and IT management, and delivers them in an efficient manner.

Daily integrated IT governance. While the Merrill Lynch budget process establishes overall investment targets, the daily governance model ensures efficient and effective utilization of resources. Each IT project, with the exception of those mandated by regulators and companywide infrastructure initiatives,

is sponsored by the business. Each project requires the approval of both the business management and appropriate technology groups after completion of technical feasibility analysis, risk and benefits evaluation, and a complete financial total cost of ownership review, including ongoing maintenance costs over five years. Projects are evaluated quarterly, again by the business managers and technologists, for ongoing business value and may be stopped or deferred through a business priority review process. Merrill Lynch also permits nontechnology budgets to be reassigned to technology initiatives.

CIOs must proactively ensure that business sponsors own their technology portfolios. They must advise those sponsors and deliver results that enable the business to meet its objectives. By performing the role of an efficient enabler, not only will CIOs avoid reverting to the 1990s perception of technology as an overhead expense, but they will create the trust necessary to become the business initiator when the opportunity arises and the returns are evident. **CIO**

Want a CXO's perspective on a specific topic? Tell us at cxoperspectives@cio.com. Marvin Balliet is CFO for the Global Technology & Services Group at Merrill Lynch.

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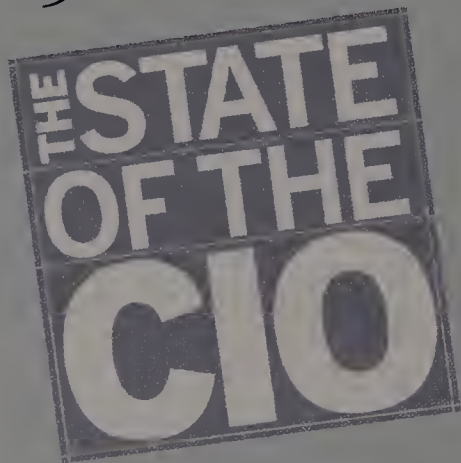
\$187,000 All CIOs

\$120,437 Government

Best- and Worst-Paying Industries

The Professional AGEN

The State of the CIO 2003, our second-annual 500 IT executives, reveals much about the

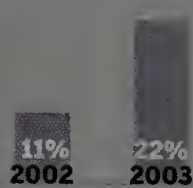


changes in your role. In a nutshell: Although CIOs in different sectors of the economy face different problems, you are, on the whole, responding to the economic downturn with an executive perspective.

Strategic thinking and planning has become more important than ever to CIO success. In recognition of the powerful effect that IT has on competitiveness today, you're asking what you can do for the enterprise rather than just for your IT department. What's more, you're demanding that business unit heads assume that same perspective when they come to you asking for new capabilities. Resolving conflicting demands from the business units is one of your biggest challenges for the coming year, according to the survey. Another is aligning IT initiatives with business goals. You can

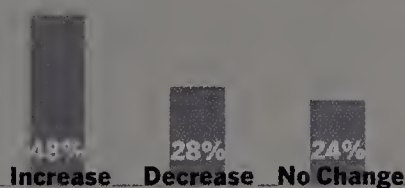
BY EDWARD PREWITT

Your Boss



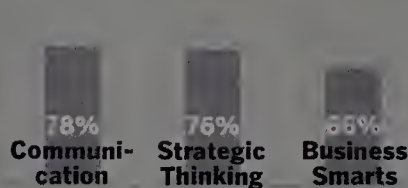
Twice as Many CIOs Now Report to CFOs

Your 2003 IT Budget



The Well Isn't Entirely Dry

Your Most Critical Skills



Technology Takes a Backseat

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DATA

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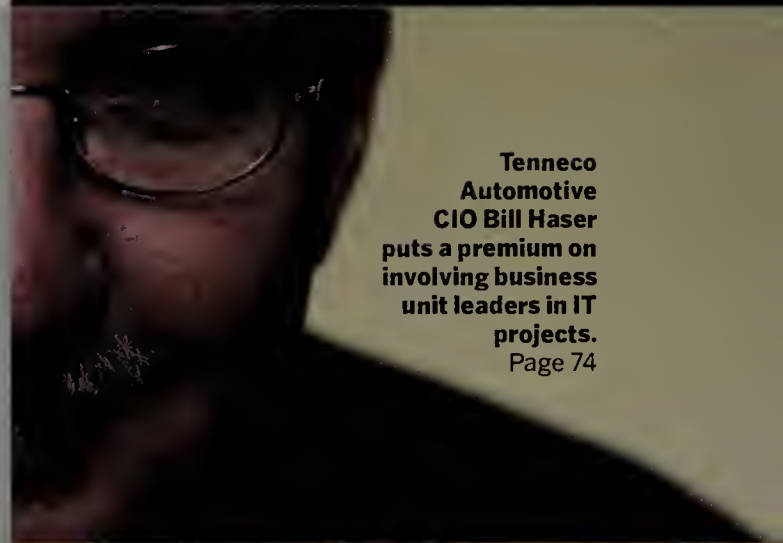
compare your personal situation with a comprehensive, statistically valid composite of IT executives in our survey results.

So how can you meet the challenges ahead? Based on CIOs' survey responses, CIO editors selected a group of leading CIOs and asked them what they considered critical to successful IT leadership. They identified six best practices that CIOs must follow to ensure that IT maximizes its value to the enterprise.

For a self-assessment tool that's serious and at the same time slightly tongue-in-cheek, turn to our pull-out CIO quiz. Answer 10 questions to figure out where your focus falls: on cost control, growth or operational efficiency. Then turn to the section that corresponds with your agenda.



CIOs have to begin with strategic questions, says Adrian Danescu, CIO at Manufacturers Bank.
Page 58



Tenneco Automotive CIO Bill Haser puts a premium on involving business unit leaders in IT projects.
Page 74



Becky Autry, CIO of the U.S. Olympic Committee, spends most of her time on communication.
Page 74

DEFINE



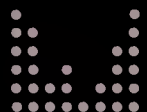
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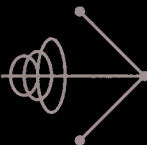
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The Importance of Being

STRATEGIC

Keeping your nose to the grindstone
is a sure way to grind your nose off

BY EDWARD PREWITT AND STEPHANIE OVERBY

The state of the CIO in 2003 is strategic.



Our second-annual survey of more than 500 CIOs reveals that (no surprise) your budgets are still tight and that (not coincidentally) you have to prove the value of each and every IT system and project deployed or planned. Yet despite the pressure to cut and the charge to do more with less, you are looking ahead rather than hunkering down. More than three-fourths of you say that strategic thinking and planning

PHOTO BY DANNY TURNER



GIC

Customers should
drive IT strategy, says
Liza Lowery, CIO of
Los Angeles.

is pivotal to your success in this business climate. That's a remarkable increase from last year's inaugural "State of the CIO" survey, when only 46 percent of you listed strategic thinking and planning among your three most important skill sets.

What does it mean to be strategic today? It means taking an enterprisewide view rather than simply focusing on your department. It means welcoming the business heads into your planning process rather than assuming that they will turn up providentially when it's time to make critical IT decisions. It means devising budgets based on what can benefit the company as a whole rather than responding serially to the requests of individual business chiefs. Above all, strategy for CIOs means being aware of the powerful effect IT has on organizational competitiveness.

Adrian Danescu, senior vice president and CIO of Manufacturers Bank in Los Angeles, looks at each new IT system and asks himself, "How does it fit in with strategy? How does it fit with the competition? How will it make us look better moving forward?"

Asking (and answering) those strategic, forward-looking questions is important because IT is increasingly the difference-

zation within the financial industry," says Danescu. "It's charged not only with maintaining the infrastructure but also to look for new lines of revenue."

As the linchpin to organizational success,

Because IT has become the key organization within financial services companies, CIOs must take a strategic view, says Manufacturers Bank CIO Adrian Danescu.

76 percent of CIOs say **strategic thinking and planning** is a skill pivotal to their success.

maker in how well an organization competes in the marketplace. It is the difference between a successful company and one that's treading water. "IT is the key organi-

IT must work more closely than ever with the business side to align strategy. It must also work harder than ever because alignment is not a destination you reach, it's a

road you travel. Liza Lowery became CIO of the city of Los Angeles one year ago and was pleased to find open lines of communication between the IT group and other departments in the city government. Each department, such as police and fire, had someone assigned as a contact for the IT group. But that wasn't good enough.

In June, Lowery's proposing to the mayor a new IT governance model in which her "customers" (Lowery has banned *user* from her staff's vocabulary) will in effect become IT planners. "Customers will determine our priorities, focus and strategy so that IT is aligned with business needs," she says. Lowery has already begun holding planning sessions with department executives, and she wants to form a "customer council" to give





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her continuous feedback on the IT group's performance.

Other indicators from "The State of the CIO 2003" survey highlight how important it is for you to work closely with your peers from the business side of the organization. Just under three-fourths of you are members of the corporate executive team—an organizational configuration that most of you consider critically important to your success

idents, to lend depth to the discussion of purpose and cost. Jones also has an IT leadership council, comprising company directors, that checks in at regular intervals on projects that have been funded.

The final step in Jones's IT governance structure is a monthly meeting of all the operating heads of the company (senior vice presidents) to review spending, project performance and other key metrics for the IT

organization. This is no group of yes-men; the senior vice presidents "can and do ask whatever they want," Jones says. But their involvement ensures that IT is being used well. And after all, the IT budget is the users' budget. Jones charges it all back.

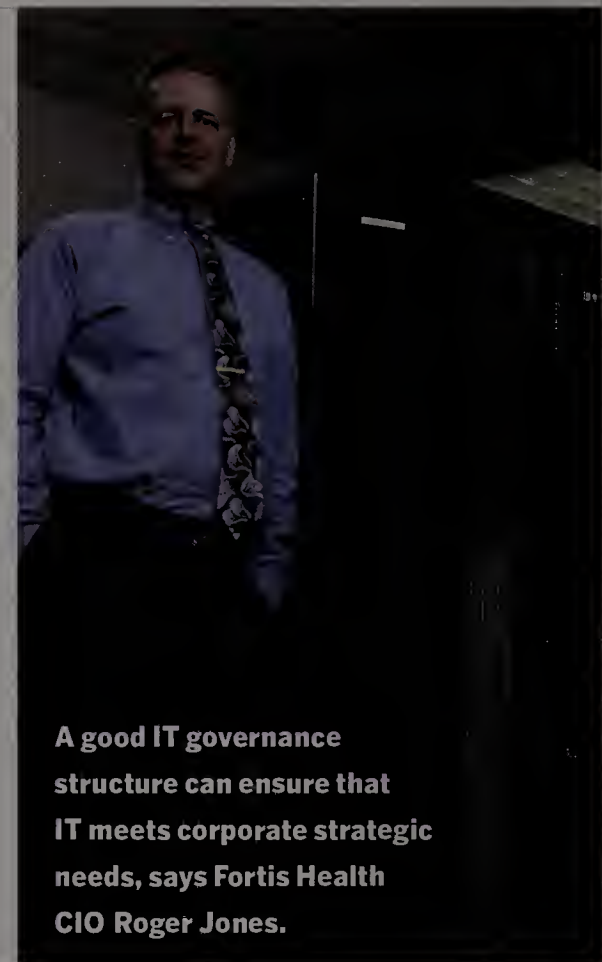
Investing in systems and processes that enable strategic planning and the alignment of IS and business goals was the number-two spend-

ing priority listed in this year's "State of the CIO" survey—57 percent of you say it's among your chief spending priorities, with 14 percent of you calling it your *top* priority.

Tim Wright, CIO and CTO at Markham, Ontario-based Geac Computer, believes that strategic planning for information technology spending is how his company will grow out of the current economic malaise. "The issue that Geac faces is where do we prioritize our development to get the best ROI and therefore growth," says Wright, former senior vice president, CIO and CTO at Terra Lycos.

"If I have to make choices with limited IT budgets, I explain my decisions [to business executives]," he says. "I engage with them and say, Here's the \$10 million I have to spend, here's how I'm allocating it and here's why. Is there any reason why I should do it differently?"

Sitting down and strategizing with his business-side colleagues, says Wright, is



A good IT governance structure can ensure that IT meets corporate strategic needs, says Fortis Health CIO Roger Jones.

the key to determining which IT projects and systems will create revenue. "I need the ability to accurately forecast what the company's business centers are going to do and accurately predict what technologies will determine our successful investment," he says. "I can tell them what we in IT can build and what it will cost. But if the business partners say, 'I can get more money from this [project],' that's where I'm going to be investing resources."

Finally, the strategic view is important for self-protection. Those of you who lack the 30,000-foot perspective simply can't properly direct IT.

"I would caution CIOs in maintenance mode," says Los Angeles's Lowery. "You can always improve. If you're not surveying your customers, you might be fooling yourself, and you will be replaced. I can't imagine anyone staying in maintenance mode today—the economy is changing so rapidly." **CIO**

Send your comments about the State of the CIO 2003 report to Leadership and Management Senior Editor Edward Prewitt at eprewitt@cio.com. Senior Writer Stephanie Overby can be reached via e-mail at soverby@cio.com.

CIOs spend the **largest chunk of their time**—on average, 26 percent of the workday—communicating with business executives and department heads.

(see "The Six Best Practices: What Leading CIOs Do," Page 74).

What's more, you told us that you spend 26 percent of your time communicating and working with business executives and department heads—the largest chunk of your workday. Roger Jones, senior vice president and CIO of Fortis Health in Milwaukee, has a gating process for IT projects that involves different business leaders at multiple levels. When first envisioning projects, he brings in business heads, typically vice pres-

CIO.com

SHOULD I DO IT DIFFERENTLY?

Tim Wright, CIO and CTO at Geac Computer, believes in going over his tight IT budget with his business executives and asking, "Is there any reason why I should do it differently?" For the next two weeks, ask Wright your questions about becoming an effective and strategic CIO or share your insights. Go to **ASK THE SOURCE** at www2.cio.com/ask/source.

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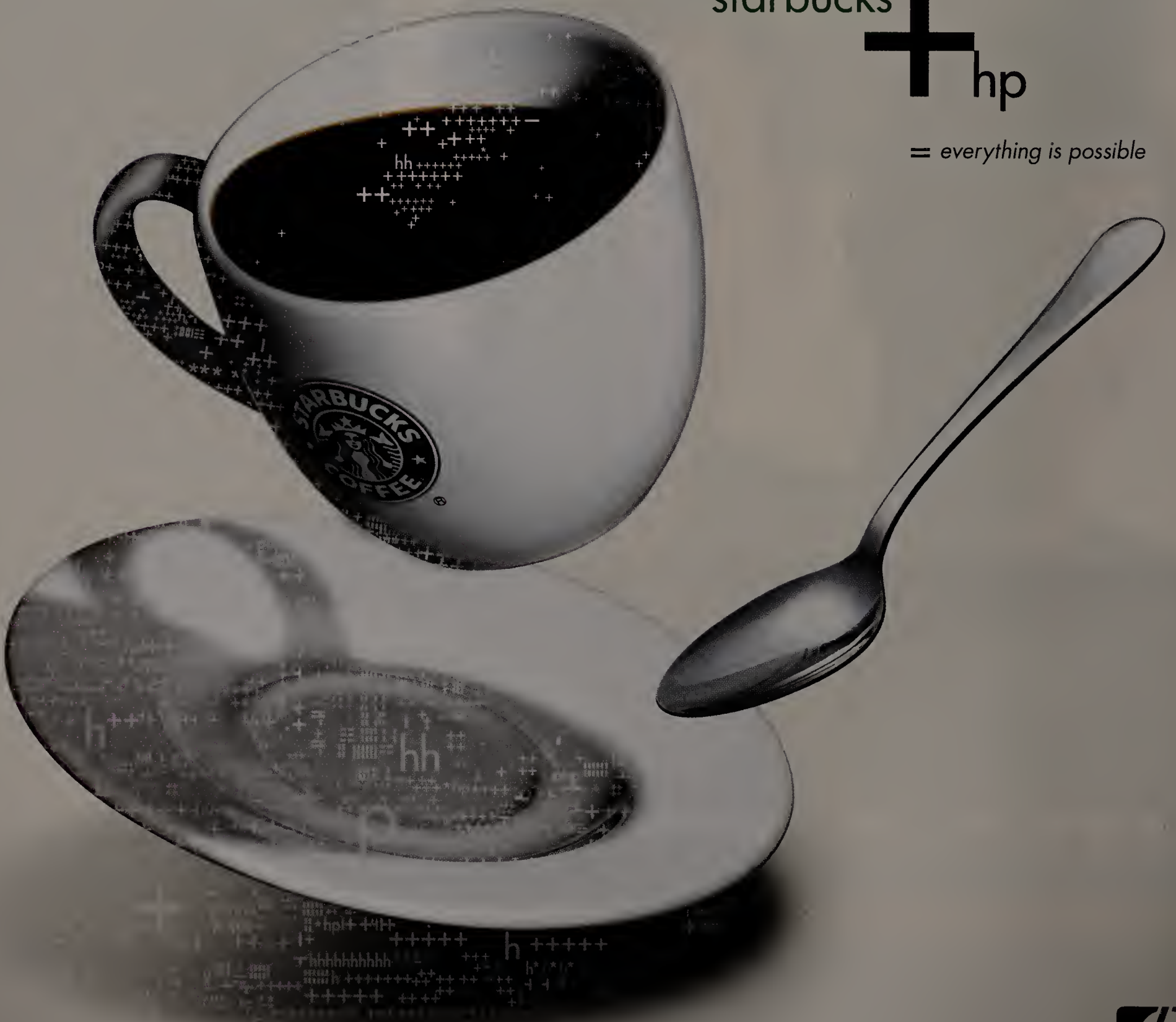
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The Quiz: What's on Your Agenda?

BY EDWARD PREWITT



Circumstances and preferences create different

types of CIOs. Some are cost-conscious—or are forced to be by the current economic climate. Other CIOs work for companies that are focused on growth and innovation, either because they see that as the key to gaining a long-term competitive advantage or because they view it as a tactical method for escaping their current fiscal mess. Still other CIOs are focused on operations and productivity—doing what they already do, only better.

Take our quiz to confirm just which kind of CIO you are. (You can compare your answers with those of the respondents to “The State of the CIO 2003” survey by going to www.cio.com/state.) Then turn to the appropriate agenda to find 10 items for next year’s to-do list—some with resources appended, a few tongue-in-cheek. The quiz begins on the inside of this pullout section. **READ ON ►**

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The CIO Quiz

HOW DOES YOUR 2003 I.T. BUDGET COMPARE WITH 2002?

- ☐ Lower overall ☐ Higher overall ☐ Lower, but with the same responsibilities

HOW DOES YOUR ORGANIZATION BUDGET FOR I.T.?

- ☐ As a cost center ☐ As an investment center that generates new business capabilities ☐ Tied to business unit performance or company productivity

WHAT'S YOUR TOP SPENDING PRIORITY THIS YEAR?

- ☐ Not spending ☐ External customer service/relationship management; implementing new technologies such as wireless ☐ Integrating systems and processes; aligning IS and business goals

WHICH STATEMENT BEST DESCRIBES YOUR PHILOSOPHY ON THE I.T. DEPARTMENT'S ROLE IN THE ORGANIZATION?

- ☐ To be as small a drain as possible ☐ To envision business possibilities and initiate with IT ☐ To enable business initiatives

WHAT'S THE BIGGEST BARRIER TO EFFECTIVENESS IN YOUR ROLE?

- ☐ Money's too tight to mention ☐ Lack of key staff and skills; fast-changing technology; poor vendor support ☐ Aligning IS and business goals; managing user expectations

DO YOU SPEND A QUARTER OF YOUR TIME OR MORE IN THE FOLLOWING ACTIVITY?

- ☐ Waiting outside the CFO's office ☐ Interacting with outside business partners; learning about technologies ☐ Working with business executives and managers

WHAT PERSONAL SKILLS ARE MOST CRITICAL FOR SUCCESS IN THE CURRENT BUSINESS CLIMATE?

- ☐ Negotiation skills ☐ Knowledge of technology options; technical proficiency ☐ Understanding business processes and strategies

HAVE YOU HELD JOBS IN THE FOLLOWING AREAS DURING THE COURSE OF YOUR CAREER?

- ☐ Accounting and/or finance ☐ Sales and/or marketing ☐ Administration and logistics

WHAT'S YOUR SINGLE MOST IMPORTANT METRIC FOR DETERMINING I.T. VALUE?

- ☐ ROI, ROI, ROI ☐ Contribution to revenue growth ☐ Improved efficiency and productivity

OVERALL, WHAT IMPACT DID I.T. HAVE ON THE ENTERPRISE IN 2002?

- ☐ We cut costs ☐ We helped grow existing revenue streams and drive business innovation ☐ We increased productivity

IF THE MAJORITY OF YOUR ANSWERS FALL IN THIS COLUMN, YOU FOCUS ON REDUCING COSTS. GO TO AGENDA NO. 1.

IF THE MAJORITY OF YOUR ANSWERS FALL IN THIS COLUMN, YOU FOCUS ON GROWTH AND INNOVATION. GO TO AGENDA NO. 2.

IF THE MAJORITY OF YOUR ANSWERS FALL IN THIS COLUMN, YOU FOCUS ON OPERATIONS PRODUCTIVITY. GO TO AGENDA NO. 3.

CIO.COM TAKE THE QUIZ ONLINE and see how you stack up against respondents. You'll also get live links to resources that will help you further your agenda. Go to www.cio.com/state.

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FOCUS GUIDE on **THE ELITE CIO**: Principles and Practices of Top-Tier IT Leadership. Find it and other Focus Guides at www.theciostore.com.

The Cost-Focused CIO

AGENDA No. 1

The corporate mantra these days is "cut, cut and cut some more." Your staff is disappearing, your systems are squeezed, and you're looking to free up money wherever possible. You're hardly alone in this focus on frugality. When listing their biggest job hurdles, your peers responding to "The State of the CIO 2003" survey overwhelmingly cited weak corporate performance and inadequate budgets as their top problems. These shrinking budgets explain why the CFO is reasserting his hegemony. In last year's "State of the CIO" survey, only 11 percent of CIOs said they reported to the CFO. This year, however, twice as many respondents—22 percent—report to the CFO.

To Do:

- 1 Memorize the names of 10 different valuation methods.
- 2 Learn the lingo of your CFO.
- 3 Look for unnecessary spending in your administrative and infrastructure costs. Then look deeper.
- 4 Get your supply chain online—including second- and third-tier trading partners—and cut out millions in transaction costs.
- 5 Eat a sandwich you've brought from home for lunch.
- 6 Set up that chargeback system you've always thought about.
- 7 Outsource any work that isn't tied down, including the associated employees. But be prepared to take back some control when the economy rebounds.
- 8 Just say no to software upgrades and Microsoft's Licensing 6.0.
- 9 Call secondary-market resellers when you're ready to buy equipment. You'll never pay retail again!
- 10 Finally, join a support group of CIOs who have no money (no membership fee, BYOB).



RESOURCES

For cost-cutting tips and techniques, see these corresponding articles from **CIO**:

- 1 A Buyer's Guide to IT Value Methodologies July 15, 2002
- 2 Get in Touch with Your Inner CFO July 15, 2002
- 3 Penny-Pinching All-Stars April 15, 2002
- 4 How to Grow Your B2B Network June 15, 2002
- 5 Chargeback for Good or Evil March 1, 2003
- 6 A Buyer's Guide to Offshore Outsourcing Nov. 15, 2002, and How to Get In and Out of an Outsourcing Deal Dec. 15, 2001/Jan. 1, 2002
- 7 Enterprise Software Upgrades: Less Pain, More Gain Nov. 15, 2002, and Showdown at the 6.0 Corral March 15, 2003
- 8 Good Stuff Cheap Oct. 15, 2002

Find links to these articles at www.cio.com/state.

The Growth-Focused CIO

AGENDA No. 2

Your way of thinking is "keep growing this company or it will die." Sure, times are tough, but an organization that retreats into its shell isn't likely to become or remain an industry leader. You're seeking IT solutions that will give your company an edge. Like 42 percent of "The State of the CIO 2003" respondents, you believe IT's role is to conjure up business opportunities and nurture them through technology. And you have some cash to work with—48 percent of survey respondents said their IT budgets actually increased in 2003, the downturn notwithstanding. Just under half of the surveyed CIOs said their top spending priorities included a focus on external customers, either in the form of better service or customer relationship management. New technologies such as wireless were rated a top spending priority by 24 percent of respondents.

To Do:

- 1 Gain momentum with quick-win technologies that save the company money with minimal investment.
- 2 Plan your hiring strategy now, while high-quality IT talent is still available.
- 3 Map out how you plan to transform the enterprise.
- 4 While everyone else is hunkering down, hunt for technologies that will allow your company to leapfrog competitors.
- 5 Eat lunch with the sales force at least once a week.
- 6 Take the e-commerce reins, and incorporate e-business into your overall IT strategy.
- 7 Bring your legacy systems into the 21st century.
- 8 If your company is in trouble, convince the board that you have a technological magic bullet. Then figure out whether you can pull it off.
- 9 Convince your CFO that value created for customers is a better metric for IT projects than ROI.
- 10 Finally, give a keynote speech to a roomful of CIOs on how you've managed to remain focused on growth and innovation.



RESOURCES

For growth and innovation strategies, see these corresponding articles from CIO:

- 1 *Overachiever* Nov. 1, 2002
- 2 *Ready, Aim, Hire* Aug. 1, 2002
- 3 *Three Steps to a Technology Transformation Hot Seat*, Sept. 1, 2002
- 4 *Buyer's Market* Sept. 1, 2002
- 6 *The New Lords of E-Biz* March 15, 2003
- 7 *Reaching Back in Time* Emerging Technology, June 15, 2002, and *Pull the Plug on Your Legacy Apps* March 15, 2002
- 8 *As the Companies Turn* Nov. 15, 2002
- 9 *Damn the ROI, Full Speed Ahead* July 15, 2002

Find links to these articles at www.cio.com/state.

The Operations-Focused CIO

AGENDA No. 3

Keepp doing what we're doing, but do it better" is your philosophy. You have the right systems in place and good working relationships with your executive peers; you look to operational efficiency and higher productivity to carry the company through this rough patch. When asked what impact IT had on the business in 2002, respondents to "The State of the CIO 2003" survey said increased productivity above all. Their single most important metric for IT value, wrote many of the survey respondents, is improved efficiency and productivity. The top spending priority for 2003, listed by 71 percent of survey respondents, is integrating systems and processes.

To Do:

- 1 Bone up on best practices for business-IT integration.
- 2 Set up governance structures that make IT and the business side jointly responsible for linking technology to company strategy.
- 3 Limit the size of projects, and require that they deliver value within six to nine months. Massive IT projects usually have significant problems with time, scope or budget.
- 4 Reject new systems if they're not scalable.
- 5 Treat the company's line managers to Happy Hour. After a few drinks, ask what they really think of the IS group.
- 6 Buy point applications, which are often cheaper and more functional than enterprise application suites.
- 7 Use demand-planning software and other inventory management applications to replace your inventory with information.
- 8 Tame your storage costs by building an enterprisewide storage architecture.
- 9 Make your business more flexible and adaptable with business process management tools.
- 10 Finally, give the same presentation to the executive board, business line managers and your IT staff on the need to align their goals and efforts.



RESOURCES

For ideas on better operations and improved productivity, see these corresponding articles from CIO:

- 1 *The Integration Imperative* Aug. 15, 2002, Special Issue
- 2 *The Powers That Should Be* Sept. 15, 2002
- 3 *Organizational Physics* Hot Seat, Aug. 1, 2002, and *Reducing Risk by Managing Chunks* Page 92
- 4 *Pilot Pathology* Nov. 1, 2002
- 6 *This Could Be the Start of Something Small* Feb. 15, 2003
- 7 *Hot Potato!* Jan. 15, 2003
- 8 *What Elephant?* Emerging Technology, May 15, 2002
- 9 *Process Power* Emerging Technology, Dec. 15, 2002/Jan. 1, 2003

Find links to these articles at www.cio.com/state.

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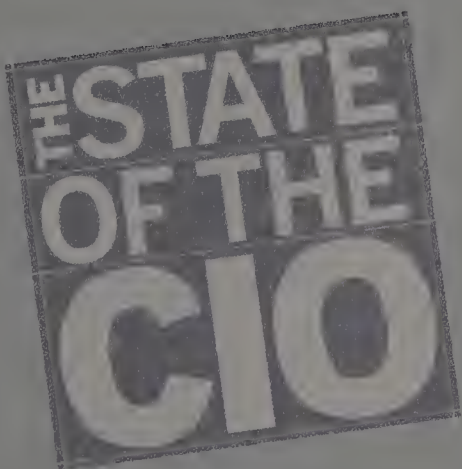
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The Survey: WHAT YOU HAVE TO SAY

A year after our first State of the CIO survey, more than 500 IT leaders tell us they're spending more time on alignment and less on staffing and new technologies. And, needless to say, they're still wrestling with scarce resources. BY LORRAINE COSGROVE WARE

This year's State of the CIO 2003 survey reveals



a very different set of challenges confronting our readers and a new set of priorities for IT leaders. Even as companies continue to struggle with a sputtering economy and weak corporate performance, and CIOs continue to wrestle with budget cuts and scarce resources, the demands the enterprise places on IT have been ratcheted up. Today, CIOs are being asked to cut costs, increase productivity, and find new ways to generate revenue and profits. In this dollar-anxious environment, alignment between business and IT, between the CEO and CIO—always important—is more critical than ever.

What's Changed

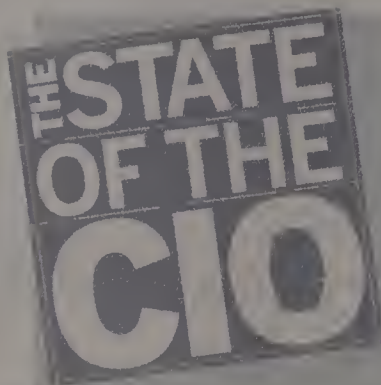
Last year, chief information officers told us that the biggest hurdles they needed to overcome were inadequate budgets and a lack of time for strategic thinking (see last year's State of the CIO issue at www.cio.com/state). CIOs reported that their energy went into staffing their departments, retaining employees and implementing new technologies, such as wireless.

This year, based on the responses of 539 heads of IT from a broad range of industries including manufacturing, government, health care, technology, education and finance, we can see that both staffing and new technologies have taken a backseat to finding best practices for partnering with business units and delivering the greatest value to the organization. While CIOs will continue to deal with tight budgets in 2003, their greatest challenges for the coming year are prioritizing demands from the various business units and aligning IT with business goals.

This year's study also finds shifts in spending priorities. Security has moved from the bottom half of last year's spending list to become the fourth highest IT spending priority for CIOs. Systems and process integration remains CIOs' top spending priority as companies continue to try to squeeze efficiencies out of their operations.

In terms of the skills CIOs believe they need to succeed in their jobs, effective communication and understanding business processes and operations remain important. However, strategic thinking and planning, which was listed as a critical skill by less than half (46 percent) of the CIOs surveyed last year, rocketed up this year's list with 76 percent of IT executives saying they considered that essential. Clearly, the pressure cooker of today's corporate world has forced CIOs to redefine their roles and their jobs. It's either that or get cooked. (See "The Importance of Being Strategic," Page 58.)

Another skill that more CIOs need to hone is financial-speak. The percentage of CIOs reporting to their CFOs doubled—from 11 percent last year to 22 percent.

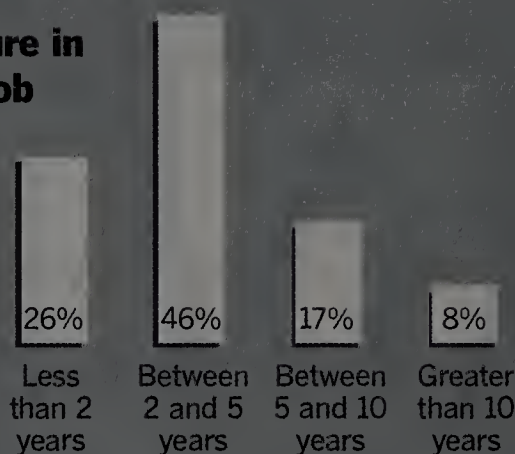


Who You Are

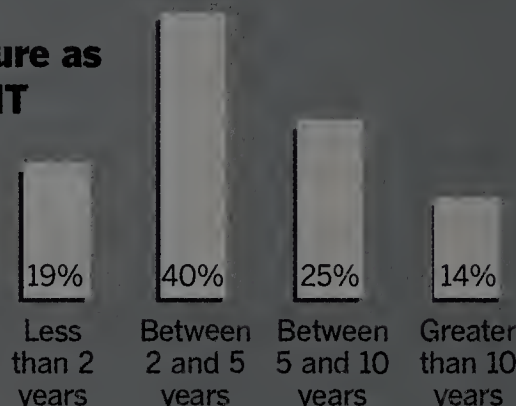
CIO surveyed 539 IT executives to bring you "The State of the CIO 2003" results. Here's what we found out about you.

About the Work You Do...

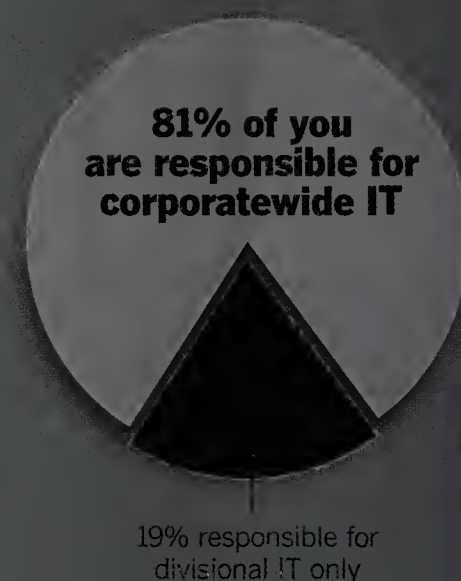
Your tenure in current job



Your tenure as head of IT



Your responsibilities



Jobs you held that influenced your CIO career

IT	82%
Consulting	34%
Administration	25%
Engineering	20%
R&D	17%
Customer service	17%
Accounting	15%
Finance	14%
Manufac./production	13%
Marketing	12%
Logistics	11%
Sales	11%
Other	12%

YOUR AVERAGE TIME AS CIO: 4 YEARS, 9 MONTHS.

Who you look after

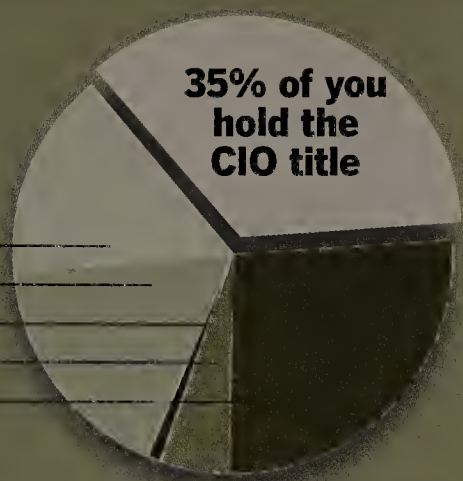
Your users (on average): 5,889
Your staff (on average): 98



About You...

Your title

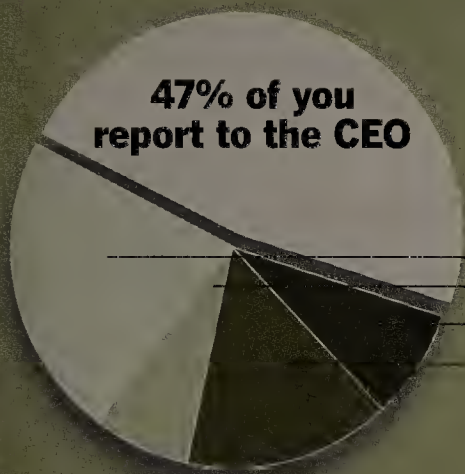
CIO & SVP 15%
CIO & VP 17%
CIO & EVP 1%
CTO 5%
Other 26%



47% of you report to the CEO

Your boss

CFO 22%
Corporate CIO 7%
COO 8%
Other 15%



87% OF YOU ARE MALE.

Your average compensation by industry

Insurance	\$223,897
Finance	\$220,833
Computer-related	\$209,574
Medical/health care	\$201,786
Manufacturing	\$176,769
Education	\$126,172
Federal, state and local government	\$120,437

About Your Company...

Your revenue

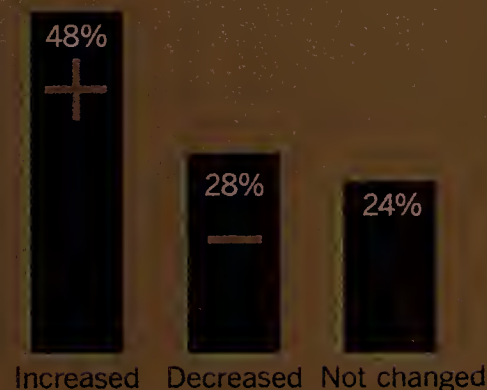
\$1B or greater	34%
Between \$101M and \$999M	37%
\$100M or less	27%

Your business

Manufacturing/process industries (noncomputer-related)	20%
Federal, state or local government	11%
Medical/dental/health care	10%
Wholesale/retail/distribution (noncomputer-related)	9%
Computer-related (manufacturer, integrator, distributor, other)	8%
Education	6%
Finance/banking/accounting	6%
Insurance/real estate/legal	6%
Other	23%

ON AVERAGE, I.T. BUDGET REPRESENTS 6.3% OF YOUR TOTAL COMPANY REVENUE.

Your 2003 IT budget compared with 2002



YOUR AVERAGE TIME IN CURRENT POSITION: 4 YEARS.

Note: Percentages may not add up to 100 because of rounding and because respondents who did not answer are excluded. Slightly fewer than 539 survey respondents answered certain questions; visit our website at www.cio.com/state to see exact sampling numbers.

CIO RESEARCH

What's Stayed the Same

In a time of uncertainty, it's nice to see that some things haven't changed. The majority (73 percent) of IT heads are corporate officers with C-level titles, and roughly half of them still report directly to the CEO—a good thing. On average, CIOs manage IT budgets that represent 6 percent of total company revenue, which is also consistent with last year's findings. That indicates that while IT budgets have been cut, at least they've been cut proportionately.

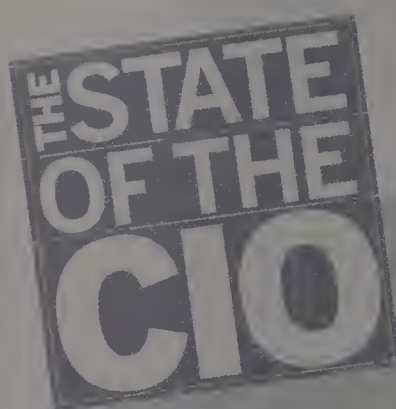
CIOs still spend the biggest chunks of their days meeting with senior executives and department heads (26 percent), managing their staffs (24 percent), and developing leadership within their departments (13 percent). They've been in their current jobs for four years on average—challenging the widely publicized notion that CIOs hop from job to job.

During good times and bad, certain IT best practices endure (see "The Six Best Practices: What Leading CIOs Do," Page 74). Whether the CIO's objective is to lower costs or drive business opportunities, our survey identifies certain key practices critical to every CIO's success: Be part of the executive team; involve leaders and users at all stages of IT initiatives; and have an executive or steering committee oversee IT investment decisions to get buy-in early and avoid surprises later.

Whether you conceive of your role as being operational or strategic, it's obvious that IT continues to grow evermore central to the business, and that the CIO's focus on partnering with the business units and aligning IT strategy with corporate strategy will increase productivity, reduce costs, improve customer satisfaction and drive innovation.

So what are you waiting for? Take your vice president of sales to lunch! **CIO**

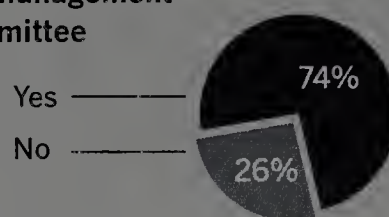
Send your comments on "The State of the CIO 2003" report to Leadership and Management Editor Edward Prewitt at eprewitt@cio.com. Lorraine Cosgrove Ware can be reached at lcogrove@cio.com.



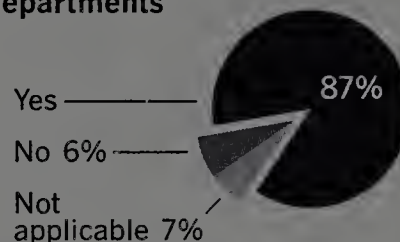
The Survey: How You Do Your Job

GOVERNANCE

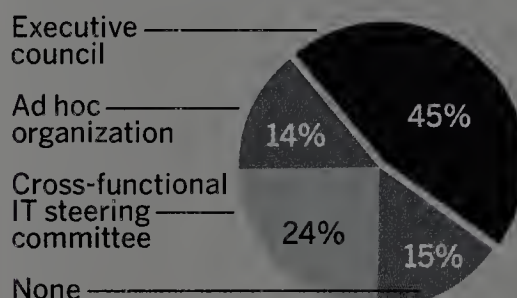
You are part of the organization's executive management team/committee



You set the IT architecture and standards that guide the independent IT decisions of divisions, business units and departments

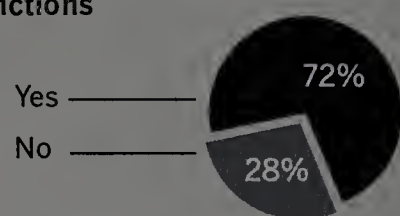


A high-level group in the organization governs IT investment decisions

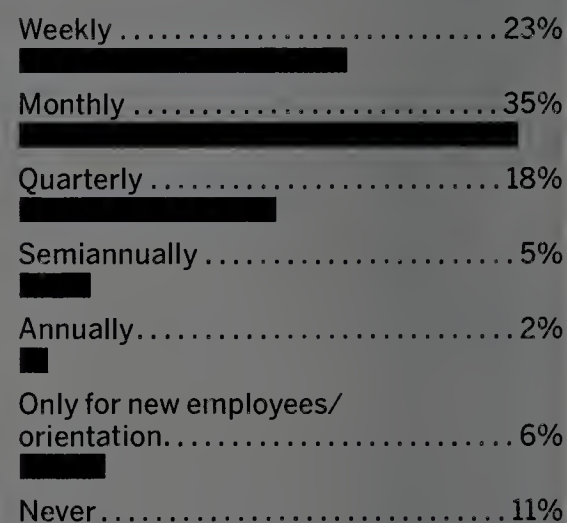


USER INVOLVEMENT

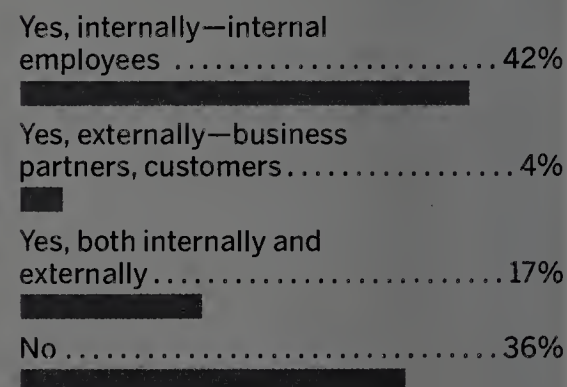
Your IT budget is determined in part by the business units or functions



Your IT department communicates with the user community at large



Your IT department regularly measures customer satisfaction with IT services



Survey results continue on Page 72

dart > bat

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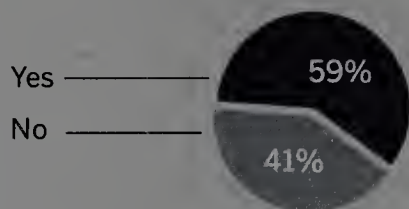


J D E D W A R D S

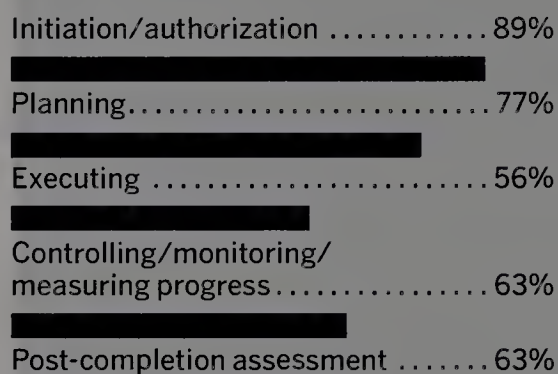
you > us



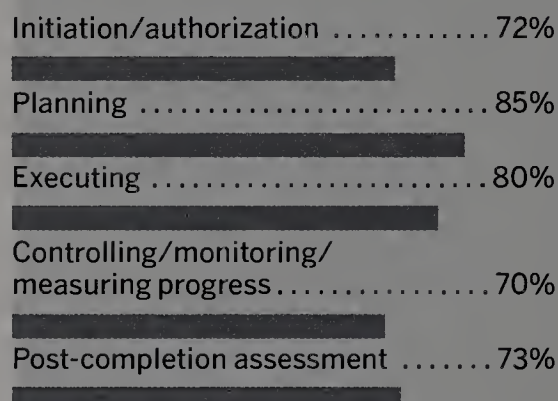
You assign IT liaisons to each major business unit or function



Senior business unit leaders or managers from affected departments or functions are involved with an IT initiative in the following stages

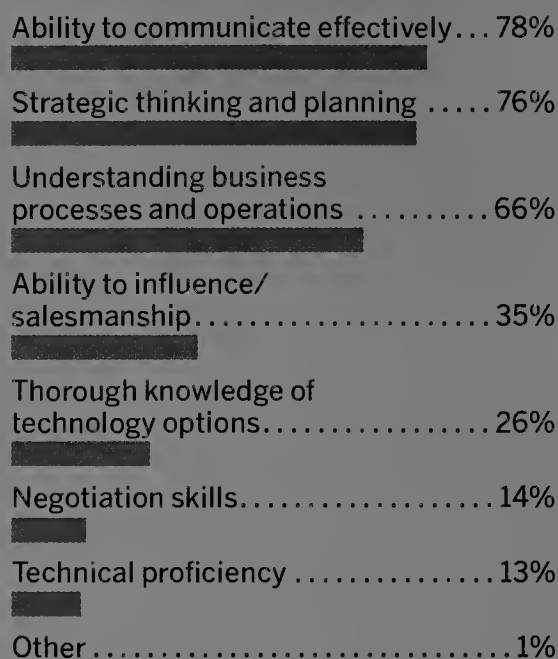


User representatives from affected departments or functions are involved with an IT initiative in the following stages



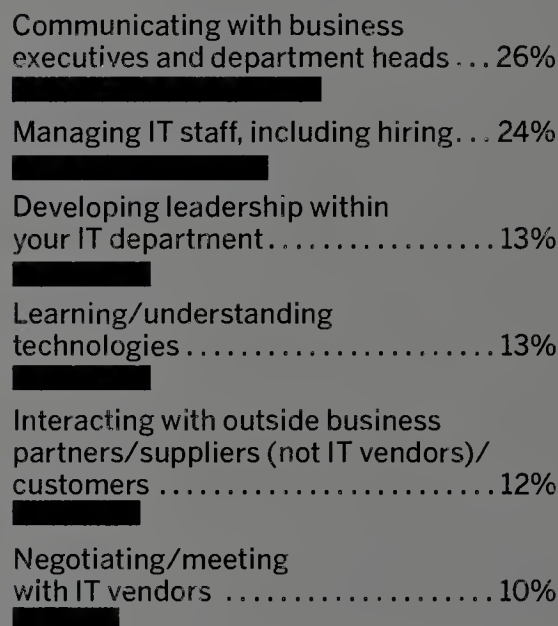
SKILLS

The personal skills most pivotal for your success as a CIO



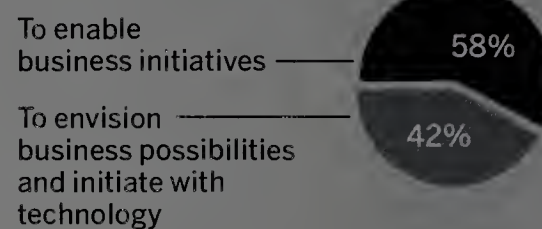
TIME MANAGEMENT

How you spend your time

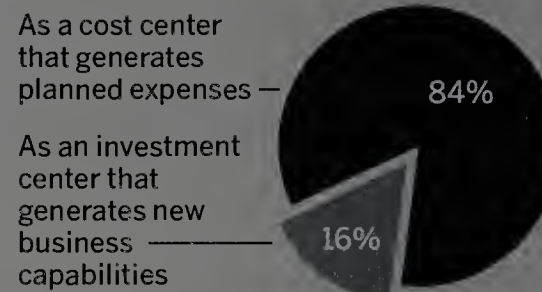


STRATEGIC FUNCTION

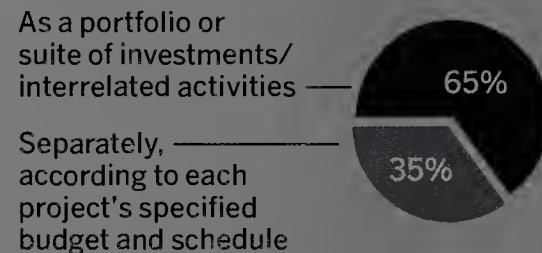
How you view the IT department's role in the organization



How the IT function is budgeted



Your approach to managing IT projects



I.T. IMPACT

Your ranking of IT's impact on the enterprise

- 1 Increased productivity
- 2 Reduced costs
- 3 Increased customer satisfaction
- 4 Drove business innovation
- 5 Created competitive advantage
- 6 Grew existing revenue streams
- 7 Generated new revenue streams

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- **FOCUS GUIDE** on **STRATEGIC PLANNING**: How to Develop and Align IT Strategy
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- The **FULL RESULTS** of "THE STATE OF THE CIO 2003" SURVEY identify the key practices that are critical for every CIO's success. The complete survey, geared to both operational and strategic IT, presents the numbers you need to know, analyzed by industry. It will be available for purchase in May.

For all these items, visit www.theciostore.com.

I.T. VALUE

The IT practices you rate as highly effective in adding value to the business

The CIO is part of the executive management team/committee 71%

User representatives from the affected departments or functions are involved at all stages of an IT initiative 64%

Senior business unit leaders or managers from the affected departments or functions are involved at all stages of an IT initiative 59%

The company has a high-level group (executive council or IT steering committee) that governs IT investment decisions 44%

The CIO assigns IT liaisons for each major business unit/function 41%

The IT organization communicates with its user population at large on a regular basis 39%

The IT organization measures customer satisfaction on a regular basis 36%

The IT budget is determined in part by the business units/functions 34%

The IT function is budgeted as an investment center that generates new business capabilities rather than a cost center that generates planned expenses 33%

SPENDING

Your top 14 IT spending priorities for 2003

- 1 Integrating systems and processes
- 2 Lowering costs
- 3 Strategic planning/aligning IT and business goals
- 4 Implementing data security and privacy measures
- 5 Automating/optimizing the supply chain
- 6 Enabling/enhancing e-commerce

- 7 External business-to-business customer service/relationship management
- 8 Knowledge management/leveraging intellectual assets
- 9 Project management improvement
- 10 External business-to-consumer customer service/relationship management
- 11 User training/education/satisfaction
- 12 Implementing new technologies
- 13 Staff development/retention
- 14 Managing IT globally

HURDLES

Your 15 biggest barriers to effectiveness

- 1 Inadequate budgets and prioritizing
- 2 Conflicting business priorities among business units
- 3 Aligning IT efforts with business goals
- 4 Shortage of time for strategic thinking/planning
- 5 Risk and uncertainty due to volatile economic conditions
- 6 Lack of key skill sets
- 7 Difficulty proving the value of IT
- 8 Weak corporate performance/reduced revenue
- 9 Ineffective communication with users/unrealistic customer expectations
- 10 Disconnects with executive peers
- 11 Leadership/business knowledge within IT department
- 12 Overwhelming pace of technology change
- 13 Poor vendor support and service levels/product quality
- 14 Managing staff/building
- 15 Inability to wield effective influence with technology vendors

The State of the CIO 2003 Survey Methodology

CIO's second annual "State of the CIO" survey was administered online from Nov. 18 to Dec. 6, 2002. CIOs, CTOs and vice presidents in charge of IT were randomly selected from our circulation file and invited to take the survey. The survey findings shown are based on the responses of 539 heads of IT from a broad range of industries, with close to half (45 percent) representing companies with greater than \$500 million in annual revenue. The results of the study are statistically valid. The margin of error for the survey is plus or minus 4.3 percent.

Much like last year, this study asked top IT executives about their career paths, including functional background, tenure, salary and the key skills needed for the role. We surveyed respondents about the job of CIO—reporting structure, greatest challenges, budget and staffing responsibilities and the user environments supported by their IT organizations.

This year's survey went further in examining the CIO role and identified the best practices for effectively managing IT and partnering with the business units. —L.C.W.

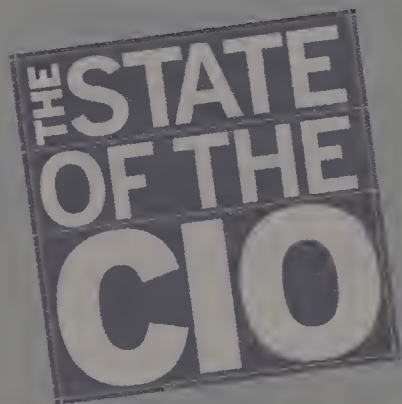
Note: Percentages may not add up to 100 because of rounding and because respondents who did not answer are excluded. Slightly fewer than 539 survey respondents answered certain questions; visit our website at www.cio.com/state to see exact sampling numbers.

CIO RESEARCH

The Six Best Practices: WHAT LEADING CIOs DO

BY STEPHANIE OVERBY
AND ELANA VARON

To be an effective CIO,
you need to do six things:



- 1 You must be on the executive team.
- 2 You have to engage senior business managers in IT projects.
- 3 You must also include users in the same projects.
- 4 You need a high-level group to make IT decisions.
- 5 You must communicate regularly with end users.
- 6 You have to assign IT staff as liaisons to business units.

THAT'S THE CONCLUSION of leading CIOs who participated in our "State of the CIO 2003" survey. From among the more than 500 respondents, CIO editors culled a subgroup that we judged to exemplify best practices for IT executives based on their responses to particular questions. Those best practices CIOs then ranked the actions they deemed most critical to successfully leading IT in their organizations. According to the top-flight CIOs, there are six—and only six—essential practices that CIOs must undertake to be effective in their jobs and ensure that IT is adding maximum value to their organizations.

But it's one thing to know what you need to do to be successful; it's another to do it. In interviews, more than a dozen of the best practices CIOs share the techniques that make them successful.

83% of our leading CIOs say:
Get on the executive team.

The Buck Starts There

How to get the executive committee on your side

The single most important management practice, according to best practices CIOs in "The State of the CIO 2003" survey, is participation in the executive team. By this measure, Rod Hamilton, CIO with Miami-based Hygeia, is head and shoulders above other CIOs. He has what may be unprecedented access to his company's CEO, Virgil Bretz: The two live in the same Bal Harbour, Fla., apartment building and often carpool to work. Yet they talk shop only occasionally on the way, says Hamilton, because they have regular meetings at the office. He mentions this to underscore a point. Simply having a key card to the corner suite won't necessarily make a CIO more effective. Leading CIOs say it's how they use their access that provides the advantage. Here's what to do.

Join the Team

Nearly three-quarters of CIOs are already members of their companies' executive teams, according to our survey. The other 26 percent needs to find a way to get in the club. The key that opens the door? You need to convince your CEO that technology is central to building and maintaining the company's competitive advantage.

When Jim Prevo, vice president and CIO with Green Mountain Coffee Roasters, joined the Waterbury, Vt.-based company a decade ago, it had a skeleton IT staff and a network infrastructure so fragile that the office LAN sometimes crashed if someone tripped over a wire. CEO Bob Stiller understood that technology could help the company grow, and he created the CIO position as part of the executive team. "[Stiller] wanted the technology person that close to him so he could influence what was going on in IT and be educated about [it] without having to go through another person on his staff," says Prevo. It's logical to include the CIO on an executive committee, which typically encompasses marketing, sales, finance, human resources and other business enablers, so that every aspect of running the company is represented, Prevo says.

At Hygeia, which provides management services to health insurers, CEO Bretz decided early on that technology would give the

company the edge it needed to compete with larger, more established companies, Hamilton says, adding, "The fact that Virgil viewed technology as strategic was one of the key motivators for me" when he decided to take the job.

Get on the Agenda

Once you have your own chair in the executive conference room, you have to make good use of the meeting time. At Hygeia, IT is a permanent item on the executive committee's monthly agenda. Although anyone on the team can put an issue on the table, Hamilton likes to use the time to educate colleagues about the benefits and risks of new technologies and get feedback about how his organization is performing. He's also able to set the expectations of other CXOs about upcoming projects.

This year, for example, it's a corporate priority to do more business with customers online. But Hamilton notes there are many misconceptions about how much connectivity is possible. "Connections are a broad, utopian concept," he says. "Each [business] executive is operating with his own understanding of what it really means." Hamilton has taken advantage of his monthly platform to establish a common understanding about the type of online interactions that are technically and operationally feasible. Without that consensus, "there's a strong risk marketing teams will sell something we can't deliver or that is inappropriate technologically," he says.

Hamilton also has a standing, hour-long meeting once a week with Bretz to talk about anything that either of them have on their minds. For a while, Bretz was too busy for the meeting and let it slide. He asked to start it up again when he felt he was losing touch with what Hamilton was up to. "There were things he needed to understand but didn't because he didn't give me enough time," Hamilton says.



CIO Rod Hamilton uses Hygeia's monthly executive committee meeting to educate other executives about what technology can, and can't, do.

Speak Their Language

Prevo has a degree in business administration and work experience shepherding new product introductions at Digital Equipment Corp. When he talks with other executives, he speaks in terms of business strategy. A few months ago, he got approval for an unbudgeted expenditure on software licenses for demand planning, inventory planning and some CRM tools, among other applications. "Some of those needs we've identified for years and haven't moved on" because other projects took priority, says Prevo. He decided it was time to go forward when a vendor with whom he already had a relationship offered him a good deal on a bundle of licenses.

Prevo explained to his executive colleagues the advantages of locking in a good price on software licenses that the company would need in the future. He described how the expenditure would affect the IT budget and emphasized that the purchase would not commit the company to a major new system deployment that would disrupt

existing projects. "We're not trying to build a big CRM project and turn the company on its ear," says Prevo. It was a compelling case.

When the executive team comes to understand the business value of a project, they'll be allies when it's time to execute it. That's one reason why access to senior executives is critical, even if a CIO isn't on the top management team. At Dallas-based Centex Homes, CIO and Vice President of Information Systems Charles Irsch is not an executive committee member but says he has "an open invitation" to bring any high-level IT concerns to the group. He got help from top management when it was time to roll out the company's supplier extranet. "They were able to work with a lot of our regional vice presidents and get them bought into the process much more quickly than I could," Irsch says. Senior executives made the deployment a topic on the agenda for an offsite meeting, where they presented the concept, reviewed the results of a pilot project and described the next steps of the rollout.

—E.V.

BEST
PRACTICE

69% of our leading CIOs say:
**Involve business unit managers
in all stages of projects.**

Hook Your Business Leaders

How to keep the business engaged in IT initiatives from start to finish

Before Bill Haser became vice president and CIO of Tenneco Automotive in 1998, he had spent 12 years on the business side, most recently as a group controller for a subsidiary of the Lake Forest, Ill.-based manufacturer of auto parts and systems. "I think part of the reason I got this job was that I was tired of having IT done to me," says Haser. So when he took the CIO job, he *wanted* to involve business managers in the IT process.

In 1998, the \$3.5 billion company had just begun the multiyear process of implementing SAP's ERP product to its 74 manufacturing facilities in 22 countries, primarily one location at a time. But initial implementations went less than smoothly. "The first projects we did were your typical IT projects: The business gave us their requirements, we gave them the system, and they struggled," he says. As the SAP work continued, Haser noticed another disturbing trend: Only 60 percent of project milestones were being met on time.

That's when Haser decided he needed to involve business managers more intimately in IT projects. Like many of his peer CIOs, Haser has found that the only way to do that is to make the business leaders feel like ultimate owners of IT projects. Nearly 70 percent of best practices CIOs in "The State of the CIO 2003" survey said it's

extremely important to involve senior business leaders or managers in all stages of an IT initiative. Here are three methods that leading CIOs use to bring the business side into the IT process.

Establish a Clear System

Haser has set up a project management process (PMP, as it's known around Tenneco) for all IT projects. PMP serves to clarify the requirements of business involvement. At the start of each initiative, the company's IT department identifies a business champion and business project manager. The champion is the general manager of a plant or a business vice president who will reap the project's benefits. The project manager is someone selected by the champion from his staff. If managers are reluctant to designate champions or devote their own time, Haser takes that as an admission that the project is a low priority.

"The business champion is the person ultimately responsible for the recognition of the business value of a project. If we're claiming \$1 million in savings, his annual operating plan must reflect that," Haser explains. "And the business project manager makes sure the business roadblocks are taken out of the way." For example, a business PM shepherding a project involving MRP software recently determined that the project staffers didn't have the right skills to run the application. The business PM arranged to have them trained and in the meantime brought in temporary help until the staffers were up to speed.

An IT project manager familiar with project management methodology rounds out the project team. The team begins by reviewing its PMP: what they will have to report on and when, as well as instructions on how to identify and resolve problems and changes in scope. The team figures out the resources required (such as a materials manager to describe business processes or a financial analyst to help with the figures) and each individual's level of involvement. Then



Bill Haser, CIO of Tenneco Automotive, involves business leaders by insisting on both a business champion and a business-side project manager for every IT project.

throughout the life of the project, the business leaders, with the help of IT, follow the very detailed steps written down in the PMP.

Haser credits the requirement that management be involved in IT initiatives for an on-time completion rate of more than 90 percent for all project milestones—an increase of 30 percentage points. Management participation in IT projects has been particularly important as belts have been tightened at Tenneco. During 2002, Haser's budget was slashed 15 percent, but the IT team was able to complete twice as many projects as during the previous year—and still come in well under the lowered budget. Haser hopes to continue the improved performance in 2003, despite a cut in his IT budget of another 6 percent.

Encourage Business Leaders to Think in IT Terms

At Palm, the \$1 billion handheld device manufacturer based in Milpitas, Calif., the majority of IT projects are initiated by managers in the lines of business. CIO Marina Levinson asks the business managers to make a pitch first to their functional vice presidents—including a presentation of costs and benefits—for any IT project. If approved by the vice president, the project then goes before the

information technology steering committee.

When, for example, the company's Latin American unit switched its repair operations to a new outsourcer at the end of 2002 and was left without a customer relationship management tool to support its call center operations, the dislocation was relatively short-lived. Rather than leaving it to IT to figure out the business requirements, the vice president of customer service for Americas chose the Siebel Systems CRM software Palm had been using in other units, based on an estimate that the business unit would see benefits within two to three months. He then presented the project to Palm's IT steering committee, which was duly impressed. The application was in place just two and a half months later.

"IT has to manage from the back," Levinson says. "We [in IT] do a lot of things behind the scenes, but for projects to be successful you have to have senior managers say, 'This is mine. It's integral to my success.'"

Business ownership of IT projects from the get-go has been helpful to Levinson as she's switched gears from keeping pace with a company growing at 100 percent a year (when it was spun off from 3Com in 2000) to one that has slashed its IT budget during the past two years. "You're faced with the dilemma of how you cut your budget by 50 percent without crippling the company," Levinson says. "Having business representatives initiating and proving the value of IT projects ensures that what we're working on is of the highest priority."

Make Managers Set IT Priorities

The only workable method of prioritizing IT projects that Jim Burdiss, CIO of Chicago-based Smurfit-Stone Container, has found is to get business leaders to do it. To whittle down the hundreds of competing requests for IT services that come from each of the packaging manufacturer's four autonomous divisions, Burdiss forms user groups around a specific area of technology that affects all divisions, such as e-business. Each group is chaired and populated by eight managerial representatives of the business and includes one of Burdiss's IT directors. It's a kind of mini-steering committee working below Burdiss's executive IT steering committee, which "doesn't have time to participate in the day-to-day drudgery of IT decisions," he says.

Burdiss got the idea two years ago when he was facing a pile of 150 e-business related requests from various units of the \$8.4 billion company. It wasn't a first-in, first-out situation; IT had to figure out which projects should go to the head of the line. Burdiss first gave

preference to initiatives that involved external customers or were based on a demonstrated business value. But once word got out that customer value was the criterion, every vice president and his brother were screaming, "Hey, it's not me that wants it, it's Wal-Mart!" As a result, prioritizing was getting harder, no one was happy with IT, and the IT department was miserable. "We weren't pleasing anybody, and we were at the end of the whip," Burdiss says.

So he decided to let the business managers battle it out by forming an e-business users group. Now, when any department leader has an e-business request, he must explain to his peers how it fits into the strategy of the company as a whole. The portfolio of e-business projects has gone from 150 to 50, with 10 having priority at any one time. IT-business relations have improved because division leaders "know why their project is off the list, and they knew that it was the

business itself that put it off the list," says Burdiss.

Last summer, Burdiss added a data resource users group because he was getting inundated with requests for help with data management. Burdiss is now looking into other technologies that could be ripe for this kind of business-driven shared services group. "We spend 1 percent of revenue on IT yet at the same time we don't want to deprive our business of good IT," he says. "And this kind of a users group is one of the best ways to do that." —S.O.

BEST
PRACTICE

69% of our leading CIOs say:
Involve user representatives in all stages of IT projects.

People Use Your Systems, Remember?

How to work user preferences into IT initiatives

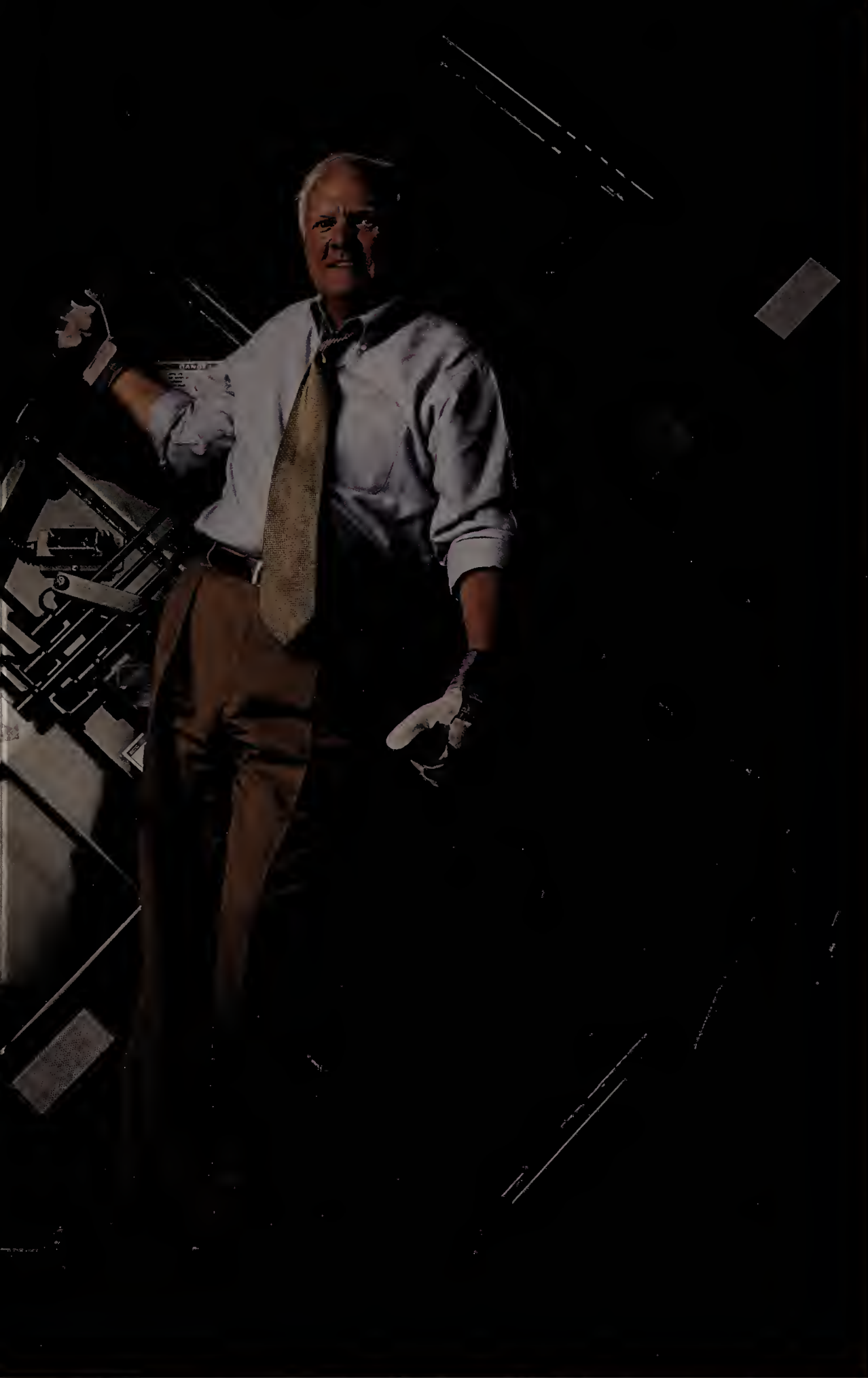
When Tom Smith took over as the new senior vice president and CIO of Waste Management in 1999, the company's users were divorced from IT. Charged with introducing a host of new systems to turn around the struggling \$11.3 billion trash hauler, Smith knew he needed the company's 53,000 end users on his side, or the massive modifications he had in mind would never take root. Users are "who you're building the systems for, so they have to be involved. Most systems failures can be attributed to inadequate user involvement," Smith says. "We knew we had to start rolling people through our projects who had been working in the actual business and get them to participate with us—from setting requirements to QA testing to training."

In answering "The State of the CIO 2003" survey, 69 percent of best practices CIOs said user representatives from affected departments or functions should be involved in all stages of IT initiatives. Like Smith, many CIOs know that getting line users involved early can increase a project's chances of success. But figuring out who to invite to the party and how to get them involved can be the real challenge, particularly in large or far-flung enterprises. Here's how leading CIOs do it.

Find the Expert Users

Smith is located at Waste Management headquarters in Houston, but his users are spread out among 48 states and Canada. Getting them all involved in IT initiatives would be a logistical impossibility. So Smith has focused on getting the *right* end users engaged. His project leaders work with a core team of experts from the corporate and business levels, as well as a group of field representatives nominated by their local managers to join a geographically dispersed team for each major initiative. For example, when IT was building a new billing system, the project manager needed to talk to local office users in areas such as receivables, billing, and credit and collections. So he contacted senior managers in each functional area, asking them to nominate their best and brightest to help out. Once the hard work of locating the right users is done, convincing them to take part is relatively easy, according to Smith. "[These users] like to be actively engaged in what we're doing, and they take pride in being aware of all the new things coming down the road," he says.

Typically, a project team will handle all of the planning for a new system and provide all the technical expertise. If necessary, team members conduct site visits to ensure that they understand the system requirements. With Waste Management's biggest IT project to date—a PeopleSoft revenue management initiative that will roll 800 customer databases into one—the IT team has involved 120 users from the Phoenix field office in requirements planning and software selection. "They brought a knowledge base to the table that you



never would have gotten through the traditional approach of defining requirements and matching up software to that," says Smith. "Without that [user involvement], this project would have a higher risk of failure." The revenue management pilot was implemented in Phoenix in February.

Seek Out the Doubters

For any major IT initiative, Ron Remy, director of IT operations for Lockheed Martin Space & Strategic Missiles, knows he must involve one set of end users: the informed skeptics. "They're public enemy number one" because they can bring IT projects to a screech-

ing halt, "but if you involve them up front, they can be a good barometer for how the project is proceeding," Remy says.

A year and a half ago, he began work with a collaboration and virtual work initiative called Workshare that would allow employees in the company's two locations in Littleton, Colo., and Sunnyvale, Calif., to work together on building launch vehicles and satellites. Remy sought out the doubters right away. It was a project that had the potential to change the way the siloed, geographically focused \$6.8 billion company did business. Lockheed was beginning to see the need for experts in one division of the company to help out on projects in other areas. Rocket scientists in Littleton were needed to contribute to the \$200 billion Joint Strike Fighter project going on in Fort Worth, Texas. And the kind of online collaboration needed to do so was a foreign concept.

Inadequate user involvement is ultimately responsible for most systems failures, says Tom Smith, CIO of Waste Management. He reaches into field offices to enlist the aid of expert users.

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Locating the anti-Workshare users wasn't hard. "They tend to be subject matter experts, and they're pretty well-known" because they're vocal and they're often the creators of the systems IT is trying to replace, Remy explains. Depending on the amount of time each user could offer, Remy either assigned them to the project's steering committee or the Workshare project management team.

After a year of working with that group of skeptics, the project has made headway, thanks in large part to their involvement, Remy says.

Today, nearly 500 people in the company are using Workshare, and the project has extended to other Lockheed Martin companies. The new way of working is enabled not so much by the technology itself—document management products have been on the market for a while—but by the involvement of formerly nay-saying users, Remy says. "They have a strong set of views," he adds, "but if you can win them over, [the skeptics] end up being the early adopters and thought leaders who influence others."

Keep a Check on User Involvement

Though Remy is convinced that involving skeptics is important, he offers one caveat: Don't let them hijack a project. It's a lesson he

Powerful Insights.
Actionable Ideas.
Great Networking.

THE COMPLETE CIO

AN AGENDA FOR PROFESSIONAL AND PERSONAL SUCCESS

Hyatt Regency Coconut Point Resort & Spa • Bonita Springs, Florida • April 27-29, 2003

SUNDAY, APRIL 27

8:00 am-1:30 pm
Golf Tournament

3:00 pm-5:00 pm
Registration

6:00 pm-8:00 pm
**Registration, Welcome
Reception & Golf Awards**

MONDAY, APRIL 28

7:00 am-8:00 am
Networking Breakfast

8:00 am-8:15 am
Welcome

**ABBIE
LUNDBERG,**
*Editor in Chief,
CIO Magazine*

**JONATHAN
ZITTRAIN,** *Con-
ference Moderator
and Cofounder,
The Berkman
Center for Internet
& Society, Harvard Law School*

8:15 am-9:15 am
The Complete CIO
CHARLIE FELD,
*Founder, The Feld
Group & Former
CIO of First Data
Resources, Delta
Air Lines, Burling-
ton Northern and
Frito-Lay*

CIOs increasingly have more of a hand in defining and driving corporate business strategy. And everyone—business line managers, the executive management team, the CEO, the board of directors—has greater expecta-

tions of their CIO. What are the essential skills and attributes needed to thrive in the CIO role today? Charlie Feld talks about his own experiences over time as CIO of very diverse businesses, and what his client companies demand today.

9:15 am-9:40 am
**2nd Annual State of the CIO
Survey Results Highlights**

**LORRAINE
COSGROVE,**
*Research Editor,
CIO Magazine*

This year's exclusive survey of over 500 IT chiefs reveals a very different set of challenges and a new set of priorities from a year ago. We share some of the highlights.

9:40 am-10:30 am
**View from the Top:
Creating Value
Through IT**
NIGEL MORRIS,
*Cofounder, Presi-
dent & COO,
Capital One Corp.*

Morris shares his viewpoint on the role of IT, and the criteria for measuring a CIO's ability to articulate and deliver true IT value to the enterprise.

10:30 am-11:00 am
**Coffee Break and Sponsor
Exhibits**

11:00 am-12:40 pm
Sponsor Briefings

12:45 pm-2:15 pm
Networking Lunch

2:30 pm-3:30 pm
The CIO Interview

MONTE FORD
*Senior Vice Presi-
dent & CIO, Ameri-
can Airlines*

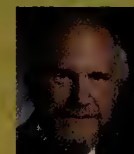
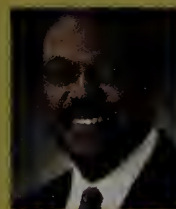
Ford took on the top IT spot at the world's biggest airline at the end of 2000, then had to deal with the acquisition and merger of TWA, the economic recession, Sabre selling its outsourcing business to EDS—and the events of 9/11. *CIO* magazine Editor in Chief Abbie Lundberg talks with Ford about his pivotal role in the organization and his plans for the future of IT.

2:30 pm-3:30 pm
**Delivering Value: How to
Manage Your IT Portfolio and
Make a Strong Business Case**

Participants:
**TIMOTHY M.
FERRARELL,** *Senior
Vice President,
Enterprise Systems,
W.W. Grainger, Inc.*
JACK KEEN, *Coau-
thor, Making Tech-
nology Investments
Profitable*

**DR. HOWARD
RUBIN,** *Vice Presi-
dent, META Group,
Inc.*

In today's business environment, it's all about value. And it's up to the CIO to make sure that every IT investment delivers maximum returns. In this session, we'll explore how to build the portfolio that's right for your organization, how to manage it for greatest business benefit, and how to use it as an effective communications



tool with your business partners. We'll also discuss how to make a compelling business case for new IT initiatives—even if your company is in cost-cutting mode.

5:00 pm-6:30 pm
**CIO Peer-to-Peer
Networking & Reception**

TUESDAY, APRIL 29

7:00 am-8:00 am
**Breakfast & Informal
Discussion Roundtables**

8:00 am-8:45 am
**What Every CIO Should
Know About Digital Rights
Management**
JONATHAN ZITTRAIN

Entertainment companies aren't the only ones with digital content worth safekeeping. More companies now are realizing the potential threats and are seriously weighing the risks of not implementing digital rights management (DRM) technologies. Zittrain explores recent trends in DRM deployment and discusses the impact on businesses of all types.

8:45 am-9:45 am
**Best Practices for Getting
Outsourcing Right**

Moderator:
MARTHA HELLER,
*Director, CIO Best
Practice Exchange
& CIO Select*

**Panelists: LARRY
FRAZIER,**
*CIO, Chevron
Phillips Chemical
Company LP*



The LIFE BLOOD of BUSINESS PRODUCTIVITY

FACT: A corporation lives or dies by its employees' ability to access information, and its network is the vital framework that carries that information to the farthest reaches of the company. Corporate networks handle work as simple as e-mailing a file to a colleague, or as complex as connecting mission-critical applications across vast geographic distances to streamline the supply chain. When it's up and running at peak performance, the network is worth untold millions of dollars in new business opportunities and efficiencies.

But here's another fact: when the network goes down, it can cost the company millions in lost productivity.

"Network outages affect every aspect of the business, from receipt of orders to customer service," says Tony Beam, director of AMPTRAC marketing at Tyco Electronics/AMP NETCONNECT in Harrisburg, Pa. "It can severely impact a company's ability to respond to clients' needs, and that can translate into lost orders, dissatisfied customers and missed opportunities."

With so much at stake, companies should have an airtight plan to moni-

tor and manage their networks as closely as possible. But too often when network outages occur, they last longer than they should because they're mishandled.

Most IS shops react to a network outage by first looking for problems in

"Most of the time the problem is in the cabling, but IS folks generally look there last," notes Bill Sewell, VP/Systems Solutions at DMJMH+N, a Los Angeles-based global network design company.

Part of the problem is that many corporate decision-makers don't give top-of-mind importance to the physical layer of the network. "The general perception of the cabling issue is, 'out of sight, out of mind,'" Sewell says. "Unfortunately, a lot of folks in a corporation don't recognize the significant impact [the network] can have on day-to-day business."

Another issue: the physical layer is often so poorly organized that even IS staffers are left troubleshooting blindly. "The typical IT network individual is accustomed to seeing the 'mushroom cloud' representing the network. He has no visibility into what's going on inside that cloud relative to physical implementation of changes in the network," says Beam.

Sewell recalls a recent experience with a regional bank in the U.S. "Their operations center was a mess," he recalls. "The cabling was so completely out of control that the company didn't have any idea what devices were connected where. They were afraid to disconnect unused services because they had no idea what they were unplugging."

The frequent moves of company employees only compound the prob-



their application software, then the network software, says Richard McNees, VP/Marketing at iTRACS Corporation, a Chicago-based infrastructure management solutions company. "The trouble is, they're looking in the wrong place most of the time," McNees says.

In fact, according to recent numbers from Infonetics Research, a San Jose, Ca.-based research firm, up to 69 percent of network outages can be traced to the network's hardware—not the software.

CIO

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Advertising Supplement

lem. Every time an employee shifts cubes, or a new employee comes on board, the IS staff must manually document the move to keep the topology of the network up to date. "But the trouble is, manual documentation is time-consuming and tedious and frequently doesn't get done," says McNees. "Depending on manual updates virtually guarantees that the

out the lifetime of the network and technical infrastructure," says AMP NETCONNECT's Beam. "IT executives can expect to see a return on investment anywhere from six to 18 months after purchase. AMPTRAC pays back the initial investment many times over during the lifetime of the network."

By removing the guesswork from

With AMPTRAC, IS executives can define their own business rules for any event, be it authorization procedures or connecting and disconnecting. The result: decreased network outages and increased workforce productivity. Because AMPTRAC provides real-time, accurate network documentation that pinpoints problems, troubleshoot-

INFONETICS: UP TO 69 PERCENT OF NETWORK OUTAGES CAN BE TRACED TO THE NETWORK'S HARDWARE—NOT THE SOFTWARE.

network will get out of control."

Adding fuel to the fire is the fact that network managers spend only 7 percent of their time planning for the network, according to a study by Infonetics Research. Small wonder that things get lost in the mix.

"If you want to know what's on your network, status quo methods of addressing the problem won't work," says Sewell. "Companies need to find a way to build automated network intelligence into the process."

THE SOLUTION: AMPTRAC Connectivity Management System

AMPTRAC is a new connectivity management system that provides intelligent, automated management of the physical layer of corporate networks. Combining Tyco Electronics' AMP NETCONNECT cabling system with real-time infrastructure management software from iTRACS, the AMPTRAC system allows enterprise CIOs to minimize network downtime, reduce IT staff workload and streamline the moves, adds and changes (MACs) that compromise network uptime.

"The iTRACS time-tested software, in tandem with the AMP NETCONNECT cabling system, will help pull CIOs out of the dark when it comes to proactively managing their physical network," says iTRACS' McNees.

AMPTRAC provides long-term assurance that CIOs can manage the network cabling intelligently and with confidence. "This is an infrastructure tool that will provide benefits through-

maintaining and troubleshooting the network cabling system, AMPTRAC is able to improve:

Mapping

The AMPTRAC system's series of customizable screens maps out the existing connectivity of the network, including unused office ports or servers. IS technicians can then make changes with confidence, knowing that AMPTRAC provides an accurate representation of the physical layer.

MACs

The system automatically updates the map of the network every time a MAC is made. "By automating a lot of manual procedures that are tedious and time-consuming, AMPTRAC greatly reduces errors caused by manual updates, as well as decreasing the workload of IS staffers," says Sewell.

Mistake Avoidance

AMPTRAC helps prevent mistakes from being made in the first place. For example, say Bill in accounting is moving from the third floor to the fourth, but the technician mistakenly switches his coworker Mary's port instead. "Now you have two outages when you didn't expect to have any," says McNees. "Try to diagnose that one." AMPTRAC would eliminate the problem. "Our system would send an alert out, and the technician couldn't close out the work order on Bill until the work was finished correctly. At the same time, it would open a work order on Mary, alerting the technician to the situation."

ing the cabling system becomes a breeze. "AMPTRAC will provide 100 percent assurance that it has identified the root cause of a problem," says Beam, "so technicians can be confident that they have fixed the right thing."

The solution also enables CIOs to proactively analyze the utilization of the network. "About 40 percent of most existing networks are underutilized simply because CIOs don't have a clue as to what's out there," says Beam. AMPTRAC, with its accurate representation of the network's physical layer, helps IS executives save money by better managing existing resources.

AMPTRAC also provides stringent security protection. "If somebody disconnects a cord in the network, you'll know about it because AMPTRAC will send an alarm," says McNees.

It all adds up to a solution that is vital to the efficient management of a corporate network—by any measure, the central nervous system of any business.

By reducing downtime and increasing productivity—by providing network intelligence—AMPTRAC is a good bet toward increasing the bottom line. After all, what helps the network ultimately helps the business. •

tyco

Electronics

website: www.ampnetconnect.com/amptrac
email: networking.help@tycoelectronics.com
phone number: 1-800-553-0938

NIEL L. BERTS, *Executive Vice President & COO, PMI Group, Inc.*
ANK ZUPNICK, *Senior Vice President & CIO, GE Real Estate*



CFO will tell you the more you outsource the more you save. But as CIO, you know the pitfalls: lowered productivity, cultural conflicts, service quality problems, to name only a few. This panel of CIOs, drawn from the CIO Best Practice Exchange, our online network of CIOs, will provide best practices for determining what to outsource, how to manage the transition, and how to sell the strategy to the board.

5 am–10:30 am
Becoming a Trusted Business Partner

DI DUNN, *Senior Vice President & CIO, Con Foods, Inc.*
 A CIO's sphere of influence has never been larger. You must work with executive management and peers, internal and external customers, line of business directors, staff and vendors. You must set and achieve strategic and tactical goals, calculate and demonstrate ROI, communicate and manage expectations. Dunn shares the benefit of her experience.



10:30 am–11:00 am
Coffee Break & Sponsor Exhibits

11:00 am–12:40 pm
Sponsor Briefings

12:45 pm–2:00 pm
Networking Lunch

2:05 pm–3:30 pm

InFocus Workshop #1
Building the Right Team: Your Success Depends On It

JUDY B. HOMER, *President, JB Homer Assoc.*



Building the right IT team may not be an easy task—but as a CIO, your success depends on it. In today's highly competitive technology talent market, what factors do you look for when you recruit and build your team that will contribute to realizing your goals? How can you become a more effective leader of your team? Executive recruiter Judy Homer provides you

with tools to identify and overcome the obstacles in your path, and set the milestones for measuring your success. Workshop participants develop strategies and create a checklist for visualizing your goals and for building the team needed to support you in making them a reality.

InFocus Workshop #2
Meeting Your Goals: Where Executive Coaching Can Help

MICHAEL BRENNER, *Chief Resource, Brenner Executive Resources, Inc.*



The biggest problems many CIOs face are with people, not with technology. The CIO needs to adapt to greatly different human interactions to handle the 360 degrees of interaction. You can't always be your own mentor. Executive coach Michael Brenner discusses the special challenges CIOs face and how to use executive coaching as a tool. The benefits can include having an objective sounding board, determining accountability, resolving conflict and maintaining work/life balance. He provides sources of executive coaches, tips on how to pick and work with one, and explores specific situations suggested by attendees.

InFocus Workshop #3
Plugging Business Case Leaks in the IT Value Pipe

JACK KEEN, *Coauthor, Making Technology Investments Profitable*



A dependable business case is a vital management tool, not just to "get the money," but throughout the entire life cycle of a project, from the moment it is conceived, through proposing, selection, implementation and systems operations. Like many things in life, however, business case appearances can be deceiving—the majority are unintentionally inaccurate and incomplete, thus dangerously misleading in their recommendations to management. Keen shows us how to identify the likeliest weak links and fix them. He shares how to avoid missing benefits, missing intangibles and poorly supported calculations

and reasoning.

InFocus Workshop #4
Effectively Marketing IT Internally

PATTY JARAMILLO, *Founder, Creative IT Marketing*

A common CIO lament is that the business and financial sides of the house don't understand IT—but Jaramillo's recent study shows that most CIOs do not have a plan in place for internal marketing communications for IT. To be successful, you need to continually educate the business side to IT value, and you need to do it in terms they understand. Jaramillo talks about the importance of being an active communicator, and shares techniques and tools that have worked for a number of organizations.

3:45 pm–4:45 pm
Developing the Next Generation of IT Leaders

Moderator: RICK SWANBORG, *President, ICEX*

Panelists: DAVID GUZMAN, *Senior Vice President & CIO, Owens & Minor*

EDWARD L. GLOTZBACH, *Executive Vice President & CIO, SBC*

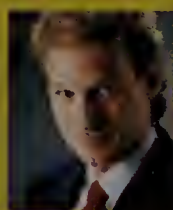
MICHAEL HARTE, *Executive Vice President & CIO, PFPC*

MAMIE MILLARD, *Senior Vice President, Technology, Travelocity.com*

In addition to honing their own leadership abilities, CIOs are concerned with identifying and developing effective leaders in their organizations. Swanborg and a panel of CIOs discuss the challenges involved, and share the techniques they've used to mold the next generation of IT leaders.

4:45 pm–5:30 pm
How to Get a Life

DR. RICK BRINKMAN, *Author of Life By Design: Making Wise Choices in a Mixed-Up World*



With the Internet, cell phones, laptops, wireless and loads of other nifty gadgets, we can now work anytime from anywhere in

today's 24/7 global business environment. Dr. Rick looks at why it's increasingly important to maintain a healthy balance between Life and Work.

5:30 pm–5:45 pm

Closing Summary

JONATHAN ZITTRAIN

5:45 pm–6:45 pm

Networking Reception

7:30 pm–9:30 pm

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Jack Cranmer, CIO of the Scottsdale, Ariz., branch of the Mayo Clinic, uses his steering committee to bring users deep into the IT decision-making process—and thereby bridge the divide between IT and business units.

president, CFO, CIO, chief accounting officer and the heads of two business units, decides which projects should move quickest. For example, the purchasing department might have a system that's working well enough to put off an upgrade, but the project accounting system has to be fixed right away to accommodate plans to take on more clients.

Meet Frequently

At the Mayo Clinic, a subgroup of the technology steering committee called the IT Application Prioritization Review meets twice a month to go over new proposals, passing on to the full committee those ideas that members think should go forward. Frequent meetings ensure that IT spending stays aligned with business strategy by providing a means for project proponents to get feedback.

Buchanan says that any time his steering committee rejects a proposal he thinks has merit, he can refine his argument and pitch it again in a month. To win approval for a recent upgrade to Forsythe's human resources management system, Buchanan used the time between meetings to talk up the project in one-on-one conversations with steering committee members, then brought the HR director to the

company two years later. A steering committee was the obvious way to align IT investments with business strategy.

Tap Top Decision-Makers

Some organizations such as Centex Homes involve only members of the executive committee in IT decision making; others, like the Mayo Clinic, include business unit heads. Buchanan offers this rule of thumb: Keep the group small enough to be able to make decisions, but make sure important business interests are accounted for.

When key managers participate in an IT investment decision, the outcome is a prioritized project list, along with resources to back it up. "I would have the head of our services group saying he needs project accounting today, and sales saying we need a CRM system," says Buchanan. "They're both valid requests. How do I prioritize those?" Forsythe's high-level group, which also includes the company

full group to help make the case. The two of them presented the argument that the existing system couldn't support the additional users that would be accessing it as the company hired new people to advance its growth strategy. Buchanan's case carried the day.

Establish Clear Standards and Steps for Project Approval

At Centex Homes, Irsch has built senior management approval into his development methodology for major projects. He starts with ideas generated within the company's business units and uses teams of IT and business process experts to analyze corporatewide system requirements and design a prototype. In the design phase, Irsch spells out the business value for the project and investigates whether it can be scaled up for use by the entire enterprise. The company, which builds residential homes, has 55 operating units spread across

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25 states, and executives take special interest in projects those units can share. Irsch says the development methodology, which is also used for non-IT initiatives, ensures he doesn't overlook the best ideas from the field.

Irsch adopted that methodology about four years ago, as the company was beginning to develop an enterprisewide procurement system to replace the hodgepodge of systems used by individual operating units. He experimented with an off-the-shelf system but says his IT organization didn't understand how to deploy it properly. Eventually, he concluded that no commercial application would work for the company and that he would have to build a system in-house. He decided the best way to proceed was to find a system already being used within the company and make it a corporate

standard. "We identified a prototype, and senior management said, This is the direction we'd like to go," Irsch says. A pilot followed, after which he began rolling out the procurement system to the business units. The rollout will finally be complete this year.

Cranmer, at the Mayo Clinic, developed a form to describe the business case for each project, which must be completed before a proposal can be submitted to the steering committee. Project proponents have to review the ROI and explain whether it fulfills a goal of the organization's strategic plan. As at Centex Homes, anyone in the Mayo Clinic can generate an idea for an IT investment. The process ensures that every idea can be considered and that everyone knows what he has to do for his proposal to pass muster with the IT steering committee.

—E.V.

BEST PRACTICE

56%

of our leading CIOs say:

Communicate regularly with users at large.

Keep Talking

How to keep in contact with everyone

If you ask Becky Autry what she spends most of her time on as CIO of the U.S. Olympic Committee (USOC), she'll tell you without question it's communication. And like many successful CIOs, she sees the benefit of communicating with users—from business leaders on down—outside the course of specific IT initiatives.

According to "The State of the CIO 2003" survey, 56 percent of best practices CIOs say that communication with the user population at large is indispensable. There are about as many ways to communicate with users as there are CIOs who do so, but some clear trends show up in the kinds of efforts that work best.

Show and Tell

For Autry, communication with her nearly 600 users—some working at the Colorado Springs headquarters, some located at training camps and others traveling all over the country—comes in a variety of forms. At the highest level, she issues a State of IT report each quarter on the USOC intranet, detailing what the technology team did in the previous quarter and what's coming next. Although the online report was far from a hit initially, Autry (a 29-year veteran of IT) knew she had to keep publishing. "The first time you put something out there, you might not get the response that you expect, but you can't just drop it. You have to keep at it," she says.

Since Autry deals with what amounts to several different businesses within the USOC—from training camps that operate much

like hotels to a sports medicine facility that needs health-care-type applications—the report shows users who are vying for her services what's going on outside their own departments and why IT has said no to certain requests. The report also reveals work done by IT that's easily overlooked by users, such as antivirus projects.

In addition, Autry periodically holds an IT open house, where her team displays technology at work in various areas of the USOC. Often, an employee from one business department will see an application being used by another group and will think of how to make it work for himself. A hands-on supplement to the quarterly IT reports, these gatherings give users a clearer understanding of how IT works than they can get from just reading. "They'll see something and say, Hey, I could use that," says Autry. "And then you have a new project that is the users' idea, and they have a stake in it."

Reach Out

Autry's outreach has been well received, but equally important to her is the other side of discourse—listening. She and her staff of 36 keep their ears open for new initiatives going on in other departments. "If we hear of some idea like, say, a new marketing program, we invite ourselves to the meeting," Autry explains. "We simply say, Hey, we might be able to help with that. Can we come?" Sometimes IT can offer assistance, sometimes it can't, but Autry says the time in those meetings is always well spent because it sets the tone that IT should be involved in business initiatives.

Show Them the Money

Like Autry, Marcia Balestrino is a consistent communicator. As senior vice president of information and technology for the Girl Scouts of the USA, she publishes articles about IT in the CEO's biweekly newsletter, creates a monthly IT newsletter for the 300 local Girl Scout offices and hosts national technology conferences to display her department's best work. Yet she still has trouble convincing her business partners and users at Girl Scout headquarters (who historically have not been involved in IT) that her department adds



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value to the organization.

Last year, she started publishing a quarterly communiqué called *Dollars and Sense*, which she distributes to executives at the Girl Scouts' New York City headquarters. With hard numbers, it details each department's portion of total technology expenditures—from the telephone system on up to large IT projects.

Getting that information together has been a big challenge, but communicating the cost and ultimate worth of what her department does will be invaluable, Balestrino says. "It's a way of charging back [costs] without charging back, and of giving users a real understanding of the cost of technology," she says. "In the past, their perception was that the technology budget was just for the technology department. But now they see it supports the entire organization. And as they receive this information on a regular basis, we hope they can use it to help make better technology decisions in the future."

Keep an Open Line

To foster communication between Smurfit-Stone Container's approximately 40,000 employees and his IT staff, Burdiss has taken a page from customer-facing groups, creating a customer advocate position within IT. The advocate, who was hired in April 2002, spends time with the line users at the plants. "She's basically an ombudsman," Burdiss explains. "She's not there to replace the help desk; she's not there just to be bitched at; she's there to talk to our customers and find out what they need."

The new position has helped the IT group build real relationships with the business side, Burdiss says. But the customer advocate's ongoing exchange with users has had practical benefits as well. Recently, one plant was trying to upgrade its business planning and control system software, but the customer advocate knew from talking with employees that the plant had done an incredible amount of customization in its initial implementation. She warned them to wait

IT staffers at the U.S. Olympic Committee sometimes invite themselves to business meetings, says CIO Becky Autry, to find out early what IT can contribute and to send the message that IT wants to be involved in business initiatives.

on the upgrade and spread the word to IT colleagues. "If the plant had just done that upgrade on its own, it probably would have brought the whole place down," Burdiss says. The customer



PHOTO BY CHRIS SHINN

ombudsman position has become so valuable so quickly that Burdiss is looking into expanding its scope.

But he cautions that simply hiring people to talk to users on a regular basis would be insufficient if he weren't following up with the same kind of relationship-building with the business. Burdiss meets at least quarterly with each division's executive to discuss what IT

has done for the unit thus far and what it can do in the future. "You can't put any of these types of communication efforts in place unless the CIO himself is taking an out-in-front posture," Burdiss says. "The CIO can't sit in his office. He can't do it over the telephone. He has to get out and meet with people and say, 'What can I do to help you?' Just ask the question and shut up." —S.O.

BEST PRACTICE

55% of our leading CIOs say:
Designate IT staff liaisons for each major business unit.

Ambassadors of IT

How to best use business liaisons

When Ames Flynn, vice president and CIO of Thomasville Furniture Industries in Thomasville, N.C., wants to know what's happening in the company trenches, he turns to his application managers. He has charged these five key staff members to do more than provide technical assistance for the manufacturing, sales and distribution functions. They're also experts on user needs, providing Flynn with early warning of problems and emerging needs. Last summer, for example, the company decided to shift some of its furniture manufacturing operations from Mexico to China. The information technology manager in charge of sales, distribution and furniture manufacturing applications, who reports to Flynn, alerted him that some other project should be put on the back burner to accommodate the new work.

At many companies, IT staff serving as liaisons to business units help CIOs identify common needs across the company, investigate user complaints and help users identify functional requirements for new projects. In "The State of the CIO 2003" survey, 55 percent of best practices CIOs rated this method as highly effective. Top CIOs say there are three keys to using liaisons.

Use Business Experts

Flynn's application managers all have work experience in the functional areas they support. The manager for manufacturing and administrative systems worked for years in accounting and in Thomasville's manufacturing plants. The e-business manager has a marketing background. To ensure the managers keep up with what's happening in the field, Flynn asks them to spend four to five days a year on the front lines, working in the factories or offices where their systems are being used.

Cranmer of the Mayo Clinic subscribes to the same philosophy. For his customer relationship managers, he taps only analysts or IT

project managers who are former nurses and lab technicians. Cranmer describes how a critical care nurse he recruited to be his liaison to the clinic's intensive care unit made a crucial contribution to managing user expectations for a new patient-monitoring system. Nurses and physicians had asked for a system that recorded patients' vital signs every second—a requirement that would have generated massive amounts of data and slowed its delivery. The former nurse knew no one would ever be able to use that much information. "He had the ability to say, If I was here on my own, I wouldn't be here handwriting measurements every second," says Cranmer. Users wanted more frequent monitoring than they could accomplish manually, but recording data once a minute—or every five minutes—could satisfy that requirement in a way that made more sense technically.

Worst Practices

CIOs you don't want to emulate

If you need any additional convincing to implement the six CIO best practices revealed in "The State of the CIO 2003" survey, look at the situation facing the most challenged CIOs.

We identified 53 "worst practices" CIOs among the survey respondents based on their responses to particular questions. These CIOs—who are clustered in the manufacturing and print and electronic publishing industries and in smaller enterprises—are struggling in areas that their more effective counterparts have already overcome.

Among the biggest hurdles for the worst practices CIOs are alignment issues: disconnects with executive peers and difficulty proving the value of IT. Neither of those two issues even ranked for our best practices CIOs, who seem to be using the communication, relationship-building and governance skills described in this report to put such challenges to bed.

Another indicator of the hurdles that CIOs face: The great majority of CIOs say their companies view IT as a cost center rather than an investment center. Yet best practices CIOs were able to boost their business strategically by increasing customer satisfaction. The challenged set of CIOs, on the other hand, were focused primarily on cutting costs. —S.O.



Thomasville Furniture CIO Ames Flynn has assigned five key staffers to be IT's liaisons to the business side. All five have work experience in the functions they support, and all spend a few days each year working on the front lines of their assigned business areas.

Provide a Single Point of Contact

As CIO of the state of Texas, Carolyn Purcell frequently finds herself having to cajole agencies whose budgets she doesn't control into complying with technology standards and participating in statewide IT initiatives. For each project, she appoints a contact person from her department to maintain a dialogue with the state agency's IT staff, which implements the new standards and deploys new systems. "What we try to cultivate here is an attitude of accommodation, of service, of stability," says Purcell. Assigning a single person to field questions or complaints is a reflection of that ethic.

The liaisons provide another benefit to Purcell by collecting feedback on proposed regulations and project requirements, and reporting implementation snags. "We can't function" without such input, she says. "It makes whatever product we're pushing out the door usable and practicable, instead of an isolated product that is solely the result of someone's imagination."

At the Mayo Clinic, Cranmer recently created the customer relationship manager position as a single point of contact between his shop and the clinic's departments. Prior to the new arrangement, many IT staffers interacted with users, but no single person was responsible for collating all the concerns from a department and coordinating a response. Now, with one point person for each

department, Cranmer expects service levels to improve. In addition, the customer relationship managers will hold regular meetings with senior IT staff to share information. Cranmer says such exchanges should help his staff identify projects that can serve more than one department and will help him with planning.

Anticipate Issues

Forsythe's Buchanan decided to designate liaisons from his staff to the company's business units after an executive complained during an IT steering committee meeting about a problem with Forsythe's homegrown order management and configuration system. "Our impression was that it works fine," says Buchanan, so he sent some staff to investigate the complaint. "My feeling is that there are one or two people who have a misperception about what the application does, and that turned into an impression that the system doesn't work," he says. Going forward, Buchanan would rather learn about potential problems brewing before his executive colleagues get wind of them, so he'll charge his new liaisons to sniff out trouble.

In Texas, the 30 webmasters for the state agencies meet monthly with the liaison from Purcell's office to discuss ongoing projects, such as improvements to TexasOnline.com, the state's government portal. The group uses a Listserv to keep in touch between meetings. Thomasville Furniture's application managers are expected to meet with their business constituents every week or two, and to

gather information from department heads and lower-level managers alike. Flynn pulls the application managers together quarterly to translate their feedback into deliverables for the next quarter. Then he takes this agenda to Thomasville's IT steering committee for approval. The dual-direction communication—top to bottom and across functions—is helping Flynn overcome one of his biggest hurdles: dispelling a perception common in the furniture industry that IT is made of techies with no business savvy.

cio.com Do you agree that it's absolutely vital for the CIO to be on the executive team? Is it always necessary to assign IT staff as liaisons to business units? **WHAT ARE YOUR BEST PRACTICES?** You can **WEIGH IN** with your experiences at comment.cio.com/weighin.

That battle, like the others detailed in this Special Report, is all too familiar to CIOs in most industries. But CIOs who follow the six best practices described in "The State of the CIO 2003" survey find those challenges surmountable. —E.V. **CIO**

What's your experience with the six best practices in this report? Write Senior Editor Eiana Varon at evaron@cio.com and Senior Writer Stephanie Overby at soverby@cio.com.

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Breaking projects into smaller, more manageable chunks reduces the risk of failure and allows companies to better align their project portfolios with corporate strategies

REDUCING

RISK

BY
CATHLEEN
BENNETT
AND
F. WARREN
MC FARLAN

BY MANAGING

CHUNKS

IF THE PAST COUPLE OF YEARS HAVE TAUGHT US ANYTHING, IT IS THAT THE BUSINESS environment in which we function is extremely unpredictable. For companies struggling to get ahead in this uncertainty, this book has some intriguing advice on how to align your project portfolio with your corporate strategy in a dynamic way designed to flex with the shifting realities. In the chapter excerpted here, called "The Alignment Workshop," authors Cathleen Benko and F. Warren McFarlan give detailed advice on several tools aimed at helping companies manage their project portfolios and align with overall IT and business goals. One of these methodologies is an approach called project chunking, a rules-based way to reduce the high risk of project failure. Read on to discover how that tool breaks projects into more easily managed chunks or steps, which reduce the size of projects, allow later project phases to more readily learn from earlier ones, deliver standalone benefits, and give project managers the ability to more easily obtain funding and change direction and scope.

The information frontier's increased velocity has dramatically heightened expectations. [Editor's note: In this book, the authors describe the phrase "information frontier" as a metaphor for the current, unpredictable business environment.] Businesses are expected to deliver results ever faster and ever better. Project chunking responds to these rising expectations. It breaks projects into manageable chunks, each of which delivers incremental benefits. This tactic has several merits. First, risk is reduced because projects are smaller and less complex; moreover, later chunks learn from earlier ones and thus have faster response times to new information. Second, incremental benefits are realized earlier and more reliably (which is, of course, the flip side of lower risk/better return). Finally, project chunking provides more frequent choice points, making it easier to change project direction, scope or budget when needed. In this way, it makes the portfolio more flexible.

Over time, the benefits accrue and (expectedly) exceed the initial investment. With each phase of the project, the investment-to-benefit ratio changes. Projects usually have one to several

phases of net investment before net benefits are realized.

[Editor's note: To understand how chunking does all that, consider the typical approach to a project. Under this method, an ambitious, large-scale project is scheduled in a traditional phased approach during several time periods, with, as with most projects, some period of upfront investment.]

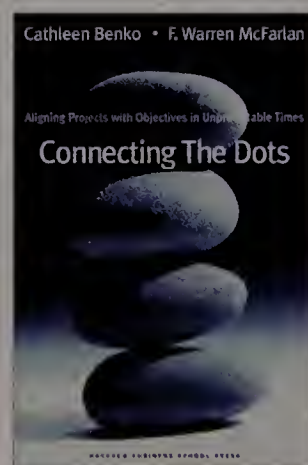
So what's wrong with this picture? Well, nothing really. It's a picture of a well-designed project that has properly scoped phases and will achieve benefits over time. But the

loftier the project goal and the longer the time to implement, the greater the risk. Remember that we're talking about life on the information frontier, where unpredictability lurks around every turn.

So what is the alternative? An incremental or "chunked" approach.

In the traditional scenario, there are only two opportunities to capture value. The long time frame pushes the realization of benefit far into the future, and the corresponding "triangle" of risk is larger.

In the chunked [scenario], each triangle is smaller than those in the traditional model because the organization is incurring less risk at each stage of investment.



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There is less risk in part because there is less investment at any given time and because each chunk realizes benefits—but also because there is more information available stage by stage. When chunking is applied, information from earlier chunks is available to subsequent ones. Each chunk can also take advantage of new information the company gains—about its markets, its competitors or a new technology, for example.

Think about it. Companies are constantly gaining new data and clarity about conditions in the market. This data should be used to shape (or reshape) current projects, as well as assist in future funding decisions. Having more opportunities to act on new information improves project results.

Definition of Chunking

Breaks projects into smaller pieces, each of which delivers standalone benefits. At the end of each chunk, a “choice point” occurs where project scope, direction, budget and other elements are modified as needed.

stands in stark contrast to the 8 percent success rate enjoyed by projects of more than 250 people and an average duration of 24 months. In other words, best outcomes are seldom achieved or may only be achieved through relatively high-risk scenarios. Most of the time, you are better off chunking.

Two important caveats about chunking. The first, implied previously, is that it isn't always appropriate. For example, you generally wouldn't use chunking to build a large-

a must. But they also focused on minimizing rework and keeping mutual dependencies to a minimum. (In other words, if one chunk was canceled, others could still go forward.) Another requirement was to work with legacy systems, since these would still be in place during some of the early chunks. With those plans in hand, the management team sought funding for the first chunk, which the board soon approved.

Chunking also let Carlson respond flexi-

Since **CHUNKING** has more frequent choice points, constituencies that will be affected by a proposed **CHANGE** can participate more often in **PROJECT** decisions.

Chunking also builds opportunities [Editor's note: to ensure that people, including employees and customers, can handle the change caused by a particular project]. Since chunking has more frequent choice points, constituencies that will be affected by a proposed change can participate more often in project decisions. [Editor's note: This is yet another reason why risk is smaller at the different phases of chunked projects.]

So what does all this mean? Although there are times when the chunking outcome would deliver a lesser net benefit than the best-outcomes result of a traditional project implementation in the same time frame, it may still be the preferred approach—especially when factoring in the probability of a best-outcomes result and the associated reduction in overall project risk. In fact, a study by The Standish Group concluded that the smaller the duration and team size of a project, the greater its chances of success (which it defined as being on time, on budget, and with all features and functions originally specified). A typical project with a team of six and a six-month time frame, for example, had a 55 percent success rate. This

scale transaction-processing system.

The second caveat: Chunking requires a clear road map and an explicit understanding of where the end-state lies.

A CHUNK OF SAVINGS EXAMPLE

Does chunking really work? Does it make sense, out there in the real world, to break bigger projects into smaller ones?

The real-world evidence suggests that the answer to those questions is yes. Let's look at the case of Carlson Hospitality Worldwide, which is the company that manages Radisson and other high-visibility hotel properties. When Carlson's managers asked their board of directors to authorize a complete overhaul of the company's central reservation system, the board rejected the \$15 million request as being too much, too fast. End of story? No. Carlson's managers then adopted a chunking approach, which featured flexible “choice” points at which the board could elect to stop the project but retain benefits already gained.

The team set up a number of guidelines to help design the chunks. Standalone benefits at the end of each one were, of course,

bly to new information not known at the beginning of the project—for example, how important connecting to the Internet would become. As information became available, some chunks were canceled and others added.

The payoff? The new system was voted best reservation system in the industry and handles more than 7.9 million room [bookings] per year. The voice-reservation chunk alone has already generated \$40 million in annual revenue.

So, in summary, chunking

- Is a “get benefits as you go,” results-focused approach.
- Offers more frequent decision points at which the company can elect to change or modify the project's course.
- Helps leverage new information and learning, thereby contributing to risk reduction.
- Also reduces risk by shortening time frames and reducing complexity. **CIO**

Cathleen Benko is global e-business leader at Deloitte Consulting. F. Warren McFarlan is a senior associate dean and director of the Harvard Business School's Asia-Pacific Initiative.

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hotseat@cio.com.

Line Up the Team

How two CIOs lead their companies to alignment

BY BEN WORTHEN

With every dollar cut from corporate budgets, alignment between business goals and IT activities becomes increasingly important. "I don't understand how you could possibly leverage IT in the business without dealing with the issue of alignment," says Jan Duffy, an analyst with Toronto-based IDC Canada.

CIOs know this. Yet many have found alignment difficult to achieve. For some companies, it is simply a matter of tradition: IT is viewed as a service organization that's brought in only when something is broken. In others, the gulf between IT and the various business units is too wide to bridge easily; because of poor communication or mistrust, IT and business have trouble getting on the same page.

In still other organizations, business units have competing goals and agendas, and line-of-business heads are reluctant to compromise for the greater good of the company if it comes at their departments' expense. And nobody wants to surrender a share of the power to the tech guy. In these situations it falls on the CIO to prove that his department has both the technical know-how and the business savvy to anticipate business needs and translate them into IT systems—no easy task.

But what if alignment could be made painless? That's the mind-set driving two CIOs in very different companies: Christine Modie at Springfield, Mass.-based Massachusetts Mutual Financial Group, and Sheleen Quish at U.S. Can in Lombard, Ill. Each has independently developed a rankings "game" that taps into colleagues' natural bent for problem-solving while channeling departmental competitiveness for the greater good of the company.

Quish's game gets business managers

to prioritize the company's IT needs themselves, while Modie focuses the attention of her IT staff on solving business problems. And although neither CIO claims to have solved the alignment enigma completely, both have found their rankings processes to be effective at bringing together the business and IT.



Christine Modie, CIO at Massachusetts Mutual Financial Group, saved \$12.6 million in a year with her alignment process.

Open Up the Playbook

Modie joined MassMutual as executive vice president and CIO in October 1999, just in time to shepherd the insurance and investment giant through Y2K. Once the millennial dust had settled, she embarked on an ERP project to replace the HR and finance modules, which took her through the end of 2001. But when she hired a consultancy to conduct post-ERP project interviews with 60 managers of business lines and functions from across the company, she had a rude shock: The anonymous responses revealed that nobody liked IT.

Furthermore, these business execs didn't

What You Really Need to Know About Email Management

LEGATO solutions



access



availability



protection

Email data management is an urgent, high-stakes challenge for every organization. According to IDC, the number of emails worldwide is expected to grow from 15.5 billion daily in 2001 to 35 billion daily in 2006. The Gartner Group estimates enterprise mailbox volume will increase 40% annually through 2004.

Apart from the sheer volume, email messages are now considered bona fide business communications, and must be easily retrieved in original formats in case of legal or regulatory investigations. To provide guidance, government and industry groups have created record management guidelines for email. In response, organizations recognize that email data management is now an integral part of daily operations.

Does an audit of your organization's email management result in a 'yes' for each of the following questions? If not, your organization could be at risk.

- Are you able to archive email documents and attachments – and associated address and routing information – in original electronic form?
- Do you have an email policy that addresses message retention and filing requirements?
- Do you have automatic, content-based classification of email to folders/categories within the system?
- Can you create and execute disposition instructions for each email folder/category?
- Have you protected your enterprise email archives against unauthorized access?
- Are you able to provide inviolate auditing of administrator access to archived documents, i.e., administrators cannot tamper with audit records?
- Do you utilize search and retrieval tools for end users and administrators, based on a full-text index and user-defined metadata?
- Do you use random-access, low-cost and non-volatile media for long-term storage?
- Have you made disaster recovery plans for your email with replication and automated recovery?
- Can you backup and recover your email server while it's online, so you minimize system downtime?

An email management solution should provide:

**Automated capture – full-text indexing
– content-based classification of
emails – disposition instructions for
email folders/categories – secure
access – inviolate auditing – search
and retrieval tools for end users and
administrators – random access,
low-cost and non-volatile media for
long-term storage – virus protection –
data protection – data management
tools – replication – disaster recovery**

Goals of Enterprise Email Management

Given the necessity of having an effective email management solution, you need to carefully consider the options, and select a solution that delivers these benefits:

- **Reduced IT costs through efficient email server management.** Look for a solution that combines automated capture, integrated support for low-cost mass storage, and content-based classification rules.
- **Quicker, lower-cost data retrieval.** Don't cut corners with email retrieval. You should have full-text indexing and cataloging that enables email retrieval to be done in hours, not weeks. Be sure to have a 'freeze' feature that can protect messages from automatic destruction.
- **Increased productivity through faster, easier access to archived emails.** Insist on a search engine with enough power so end users can access their messages, and allow authorized administrators to search multiple mailboxes for audit/regulatory requirements or other business needs.
- **Effective records management.** An effective solution adheres to email policies by using tools to categorize and manage email throughout a useful life cycle. By using a tool that integrates record management functionality into email systems, you can easily comply with the new requirements.
- **Reliable protection, replication and recovery.** Indexing and archiving emails is not enough – be sure to protect your data with adequate protection, including replication capabilities and disaster recovery.

Choose a Proven Solution Provider

With so much at stake, you need to carefully consider email management solutions. As the leader in email management, LEGATO Systems, Inc. has the expertise and the solutions to these complex problems. LEGATO is a global provider of information protection, automated availability and data access solutions, with over 30,000 customers worldwide. Email management, in particular, is one of LEGATO's areas of expertise.

LEGATO's EmailXtender™ suite provides a storage and retrieval system that manages high-volume email and optimizes email server performance. What differentiates EmailXtender from other solutions is robust functionality that addresses the full spectrum of email management requirements. EmailXtender captures and indexes all messages or attachments; increases server reliability and uptime; reduces backup time; enables easy retrieval via full-text searches; and offers enterprise-level security.

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In addition to superior technology, LEGATO works with numerous partners to provide consulting, integration, implementation, and ongoing support for its solutions. As you evaluate email management solutions, be sure to consider LEGATO.

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Hot Seat

think IT employees were qualified for the work required of them. What the results boiled down to, says Modie, was that IT was viewed as a cost center without much benefit.

"It took us a while to get through the how-could-they-say-this-about-us phase," she says. "But we eventually moved on to evaluate what kind of actions we needed to take. We decided we had to open up the 'black box' and let them know more about what we were doing."

Modie instituted a series of initiatives aimed at alignment. She had two goals: Make her IT organization more aware of business needs, and second, boost the IT group's credibility within the company by communicating the positive impact it was already having.

In February 2002, Modie challenged her 1,500 employees to each come up with an idea that could help the company. They responded with more than 2,000 suggestions, ranging from the small—cancel a weekly meeting that wasn't doing any good—to the really significant, such as consolidating multiple contracts with a single vendor and getting rid of old systems rendered unnecessary by new ones.

Modie's IT leadership group, comprising her top 200 managers, spent a month sorting and prioritizing the ideas by aligning them with feedback from the anonymous interviews. Modie calls the results her playbook. By the end of the first quarter of 2003, the IT leadership team had generated 197 "plays"—91 of which had been implemented, with the remaining 106 projects in the works.

The playbook has done much to further alignment between IT and the business side, Modie says. Simply by focusing on ways to help the company, her IT staff has become more attuned to business needs.

In terms of communicating the IT department's benefit to the business, nothing spoke louder than the money saved

from instituting playbook projects—\$12.6 million in just over one year. (Modie posts a giant thermometer-like display chart on her IT dashboard to keep track of the savings and to remind employees of the task at hand.)

The results of the playbook have gotten the attention of Modie's fellow executives, who are seeing that IT can make real contributions to the company rather than simply draining funds. Modie recently completed another round of

to making difficult situations easier.

While CIO of The Signature Group, a Schaumburg, Ill.-based insurer, in the late '90s, Quish applied that lesson to her interactions with the various business heads. Each year the process for allocating IT work at Signature was an aggravating, everyone-for-himself affair. The IT department would be flooded with project requests, only a fraction of which could conceivably get done. Then at the executive-level meeting to determine the

THE OTHER PARTS OF ALIGNMENT

Three Big Steps to Successful IT Projects

ALIGNMENT AMONG business executives and CIOs is hard to come by. Rankings processes such as those invented by Christine Modie, executive vice president and CIO of Massachusetts Mutual Financial Group, and Sheleen Quish, vice president of corporate marketing and global CIO of U.S. Can, do much to minimize corporate infighting. But you need to go beyond that to get to alignment, experts say.

1 Show your business acumen. A CIO who works toward alignment will be rebuffed if he can't be counted on as a business leader as well as a technology expert. This is why it was important for Modie to show her colleagues that she could run her unit in a businesslike manner.

2 Make business execs understand IT. Alignment isn't just for the CIO; it's a job for the businesspeople too. If your colleagues don't know what technology can do for them, then all discussions are a one-way street.

3 Remember that alignment is all about relationships. William Ulrich, head of the Soquel, Calif.-based Tactical Strategy Group, says, "A strong working relationship is the most important thing. A CIO without one is not going to succeed." —B.W.

interviews with business-side managers, which, she says, confirm the positive results of her alignment process.

Stop Spinning Plates

U.S. Can's Quish developed some of her management skills as a mother of two. When her children were teenagers, she recalls, "They would say, 'Mom, I want to stay out till 1 a.m.' I would say, 'I will give you three choices: 10, 11 or 12.'" Having choices, she realized, was the key

lucky few, the divisional heads would fight tooth and nail for their projects. Everyone hated the whole thing.

"It was like spinning plates," says Quish. "I was trying to figure out a process that would engage people—how I could get people to write things down, to separate the pieces and get a direction."

Ultimately she came up with a rankings game that got business execs playing as a team instead of competing. Quish carried that scheme to U.S. Can when she



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joined as global CIO in December 2001. She is also VP of corporate marketing.

Whenever a business unit employee submits a project request—whether for a tweak to an existing app or something as big as a new ERP purchasing module—he has to provide basic information about the project. This includes an ROI figure, if one exists, and a designation of which of four corporate objectives the project addresses: increased revenue, reduced cost, improved customer service or a stabilized environment.

There are three parts to Quish's alignment process. The objective of the first phase is to mesh the corporate goals with divisional goals. Business leaders, including the CEO, COO, CFO and line managers, gather around a table to rank the four corporate priorities from highest to lowest current priority. The execs indicate their choices out loud, for everyone to hear.

The results are tallied and averaged. Then the same procedure happens with the divisional goals. The executives and business managers rank the divisions from highest to lowest priority. The results are tallied on a flip chart and opened for discussion, which concludes only when everyone agrees that the goals are ranked in the proper order.

In the second phase, Quish categorizes the IT project proposals submitted—using the priorities set by the executives—as must-do, should-do or nice-to-do. This can be a scientific assessment or an approximation; at Signature, Quish developed an algorithm to determine the hierarchy, while at U.S. Can she just eyeballs it. The important thing, she says, is that she use the business leaders' consensus to make informed decisions.

For example, the company's number-one priority in 2002 was to reduce cost, according to the rankings game, and the most important division was domestic

MANAGEMENT REPORTS Knowledge Preservation

Convey the corporate DNA

For most companies in today's knowledge economy, the workforce is the supreme driver of performance. So what happens when a keystone worker, or a slew of workers, leaves?

Since early 2001, American companies have laid off 3.6 million workers, according to consultancy Challenger, Gray & Christmas. And let's not forget about retirements. According to the Bureau of Labor Statistics, 19 percent of baby boomers holding executive, administrative or managerial positions are expected to retire by 2008.

The loss of so much knowledge and experience will be a huge blow to organizations. "When someone leaves or is laid off, it is, in effect, a disposal of assets," says Hamilton Beazley, chairman of the Strategic Leadership Group, a consultancy based in Washington, D.C.

Is there a way to retain employee knowledge even after the employees are gone? Beazley, coauthor of *Continuity Management: Preserving Corporate Knowledge and Productivity When Employees Leave*, thinks he has the solution. His continuity management program is designed to capture and cultivate operational knowledge *before* an employee leaves the company.

In a nutshell, employees complete questionnaires (derived from a master list of questions in 22 categories), describing what they do and how they do it. They update the fields regularly. The outcome is knowledge profiles that can be passed along to successive workers. "The knowledge profile is the

DNA of the organization," says Beazley.

But will workers be willing to dissect themselves and their duties? Only 53 percent of U.S. employees trust upper management, according to survey company International Survey Research. To spur employee participation, Beazley advocates a rewards and promotions program.

Some companies have instituted initiatives similar to continuity management. For instance, Pfizer's



Retaining Knowledge Program focuses on people in strategic roles who are transferring or retiring. But Beazley says a more comprehensive effort is necessary: "[Pfizer's program is] only for retiring and transferring employees, and in the information age, that's not sufficient."

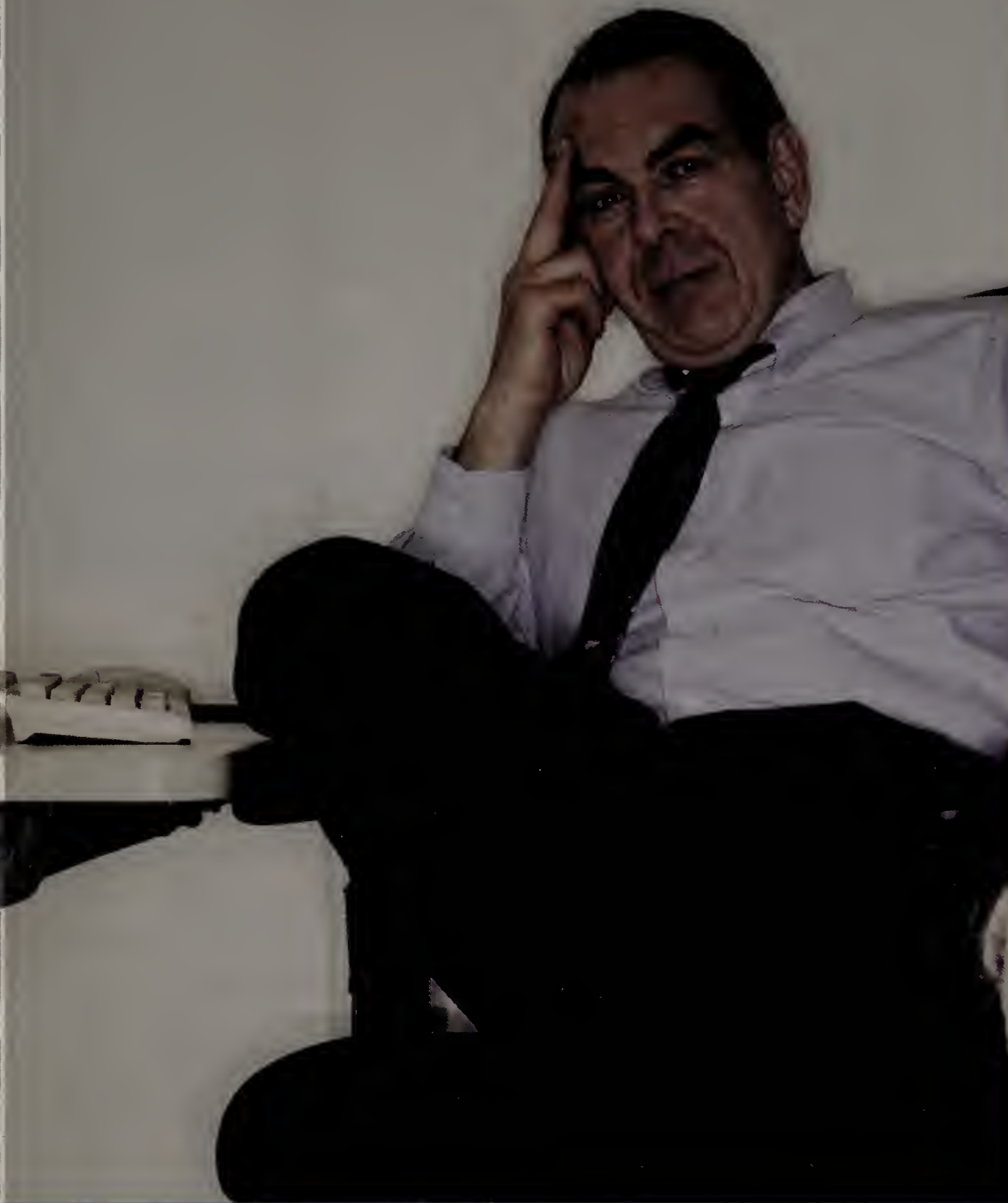
To retain their knowledge, he says, companies must institute a new daily requirement of employees. "What I haven't seen is a comprehensive, widespread approach," Beazley says. "[An initiative] that harvests [knowledge] routinely and regularly as part of doing the daily business."

—Daniel J. Horgan

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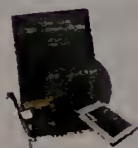
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aerosol. Not surprisingly, a new money-saving warehouse management system for that division was deemed the company's

most important IT project.

Once she has ordered the projects, Quish takes the list back to the executive team for a final review. Out of 236 proposals presented in 2002, 100 made it on the to-do list. U.S. Can was not able to fund all 100, but the alignment process makes it clear to everyone—in IT and the business units alike—which projects are the highest priority.

For Quish and Modie, their rankings processes are a way to get their IT staffs and the business units to see eye-to-eye. "Alignment is an acknowledgment that

"It took us a while to get through the how-could-they-say-this-about-us phase. We decided we had to open up the 'black box' and let them know more about what IT was doing."

—Christine Modie,
CIO, Massachusetts
Mutual Financial
Group

IT is an equal player," says IDC Canada's Duffy (IDC is a sister company to CIO's publisher). "IT has to speak the language of business. The business side has to acknowledge the centrality of IT." If an alignment game works, says Duffy, then by all means, keep playing—because everyone wins. **CIO**

What are the most effective ways for CIOs to lead alignment? Let us know at hotseat@cio.com. E-mail Staff Writer Ben Worthen at bworthen@cio.com.

Leadership Agenda BY SUSAN H. CRAMM

A Change of Hearts

The success of change initiatives depends on employee enthusiasm rather than leadership directives



Most leaders seem to interpret the phrase "change management" to mean "a way to get the organization to do what I want it to do." They follow the letter rather than the spirit of change management. As a result, their change management plans are a weak, tasteless broth of communication meetings, logos, Lucite paperweights, T-shirts and employee idea programs. One of my favorite sayings

is "People don't hate change; they hate the promise of change unfulfilled." That is, everybody hates *le grand programme du jour* that starts with a bang and ends with a whimper. With each successive program launch, workers become increasingly more cynical and, over time, stop listening and lose hope.

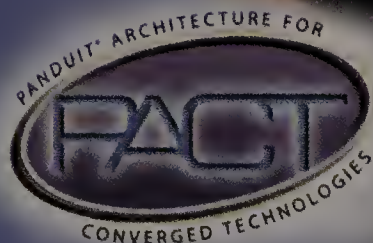
The promise of change for the better goes unfulfilled because the vision never migrates from the head of the leader to the hands of the employees. Leaders must accept the fact that even the best strategic planning processes result in flawed visions—flawed because there is much that is unknown and not directly controllable. Some of the unknown lies outside of the organization and in the future, but the bulk of the unknown can be found in the head of the people who were not involved in strategy-making.

The true spirit of change management is enabling all employees to express and apply their knowledge in a way that benefits each of them and the organization. If you really want to create a better tomorrow, you have to engage the heads and capture the hearts of your people before the hands of the organization can be mobilized.

ENGAGE THE HEAD. You need to give people a reason why change is necessary and why it is necessary now. Create a sense of urgency by using the voice of the customer. Take your fuzzy vision and clarify it by talking to the people who serve the customer. Then work on your vision until it is crystal clear, and you can communicate it in five minutes. Your five-minute elevator speech should be structured like a story, respecting the past by recognizing accomplishments and strengths, frankly discussing current challenges and what change needs to occur, and painting a picture of the better day ahead. As corporate change guru Terry Paulson says, "The difference between a vision and a hallucination is the number of people who can see it."

CAPTURE THE HEART. People are motivated by purpose, affiliation and security. You need to build all of those into your change program. Motivations are personal, so you must enlist people one at a time by understanding what drives them and bringing their resistance to the surface. Ask questions to make it easy for them to tell you what is working well, what is going wrong,

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ideas they have to make things better, and all the reasons why change should not happen or is not going well. Keep in

mind that silence is resistance carried out by other means. Again, remember to give your staff a "noble purpose" by articulating the vision in terms of what's good for the customer. Help people affiliate by teaming them with others on an important initiative. Finally, be honest with employees about the likely implications of change. Offer "soft landings" (such as education programs, severance packages and retention bonuses) for those who will lose their jobs or will need to change jobs and skills.

FREE THE HANDS. To build momentum for your change program, pick some easy projects so that people can taste early wins. Set up clear performance measurements so that progress is transparent to everyone. Define rules to ensure that people are operating consistently with your vision for change, while at the same time giving people plenty of freedom to apply their creativity (for more on how to do this, see the *Harvard Business Review* article "Strategy as Simple Rules," Jan. 1, 2001). Help people recognize when they are overloaded, and make it easy for them to ask for help.

There is nothing more exciting than working for a visionary, passionate leader. And there is nothing more frustrating than seeing visionary leaders hamstrung by their inability to create the future. In the words of organizational theorist and author Peter Senge, "What [many wannabe leaders] never grasp is that the natural energy for changing reality comes from holding a picture of what might be that is more important to people than what is."

Reader Q&A

Susan H. Cramm answers questions on "A Change of Hearts"

Q: How do you get people to back change without letting them know about sensitive information—such as that they could be laid off?

A: You can keep sensitive information confidential and still ensure a successful change effort if you treat people fairly. This requires developing clear HR policies and establishing communication channels. You need to clarify how the change-related job transitions will be managed—including announcement dates, the scale of layoffs and redeployment, and availability of early retirement severance and retention bonuses. The two-way communication mechanism must equip frontline managers with the information that will allow them to work effectively with employees and ensure that employee concerns are telegraphed back to those managing the change program.

Q: If executives have to sell a change program so hard, doesn't that point to a weakness in the new plan?

A: If executives are trying to sell a change program, they are missing the point of change management. Selling something implies that you have a finished product. The spirit of change management recognizes that the product isn't finished without significant experimentation and input from the organization. Executives are responsible for focusing the organization on the right issues, sketching out some guesses about the future and mobilizing the organization to help fill in the details.

Q: I am from Brazil, and as a project manager implementing ERP systems, the difficulty of change management is one of the huge issues I usually have to face. I am about to start a new project

in an old company with many employees who have worked there for more than 20 years. What would you recommend to capture their hearts and heads for this implementation, which will deeply change the way they work, and also probably cost some employees their jobs?

A: Go after their heads before you try to capture their hearts. The head will ask, Why is this good for the customer? Figure out how to expose the workforce to the voice of the customer on current issues—for example, the effect of the lack of coordinated supply chain management. Emphasize that the change is a customer mandate, one that cannot be ignored because of the competitive threat that exists. You will know that the case for action is firmly rooted in employees when they can articulate the customer issues and are demanding to know what comes next.

The heart only asks, Why is this good for me? The answer to that question is personal and differs for different people. You must work through the organization, one layer at a time, to obtain commitment before you try to move one layer down. If you try to gain the support of the frontline employees before you have captured the hearts of those they trust (that is, their managers), you will be fighting a losing battle. The only way to win the hearts of the middle of the organization is to guarantee job security or very nice severance and retention bonuses. You must also identify and neutralize those managers who remain opposed to the change, either by changing their roles or moving them out of the organization. **CIO**

To see more reader questions and answers from Susan H. Cramm, go online to www.cio.com/leadership/agenda.html. Cramm is president of Valuedance, an executive coaching firm based in San Clemente, Calif. Her e-mail address is scramm@cox.net.

Choose Your Path Wisely

Sony AIT data storage solutions provide a strategic alternative to linear tape formats.

As Robert Frost makes clear in his famous poem, "The Road Not Taken," picking one path over another can make all the difference. While Frost had other topics in mind at the time, his point is nonetheless applicable to today's companies that are using or considering linear tape formats such as DLT, S-DLT and LTO as their data storage solution.

Legacy formats such as Digital Linear Tape (DLT) were a reasonable data storage alternative in the past, but a combination of new business challenges and new technology choices are driving many companies to rethink their tape storage path. For example, conventional DLT systems are approaching the end of their useful life cycle, with no well-defined way to add capacity without upgrading to a new format. While Super DLT (S-DLT) and Linear Tape Open (LTO) systems do have roadmaps to the future, neither format offers a compatible solution that can span the gamut of storage needs, from the entry or workstation level up to the "Super Drive" level. In addition, upgrades require a media change, making long-term use of linear solutions more cumbersome and less flexible.

Perhaps, as Frost suggests, it's time to consider a different path. Advanced Intelligent Tape™ (AIT) data storage solutions from Sony provide a broader range of capacities, increased performance, better reliability, easier maintenance and a more strategic path to the future than the alternatives. Organizations choosing the AIT path will find themselves with a more flexible and integrated tape storage format that can span backup needs from individual PCs, to workgroups, to the enterprise.

AIT is a proven storage technology with years of successful enterprise deployments behind it. First appearing in 1996, AIT is a compact, helical scan 8MM tape format in a 3.5-in., half-height form factor. With its high capacity (up to 100GB per cassette), speed and reliability, AIT is emerging as a more strategic tape storage path compared with linear formats such as DLT, S-DLT and LTO. Consider the following advantages of AIT:

- **Reliability** – Consistent operation and assured reliability are two critical components for a tape storage system. AIT-3 drives are designed for a mean time between failure (MTBF) of up to 400,000 hours (compared with DLT's 250,000 MTBF rating) and a 100% duty cycle.

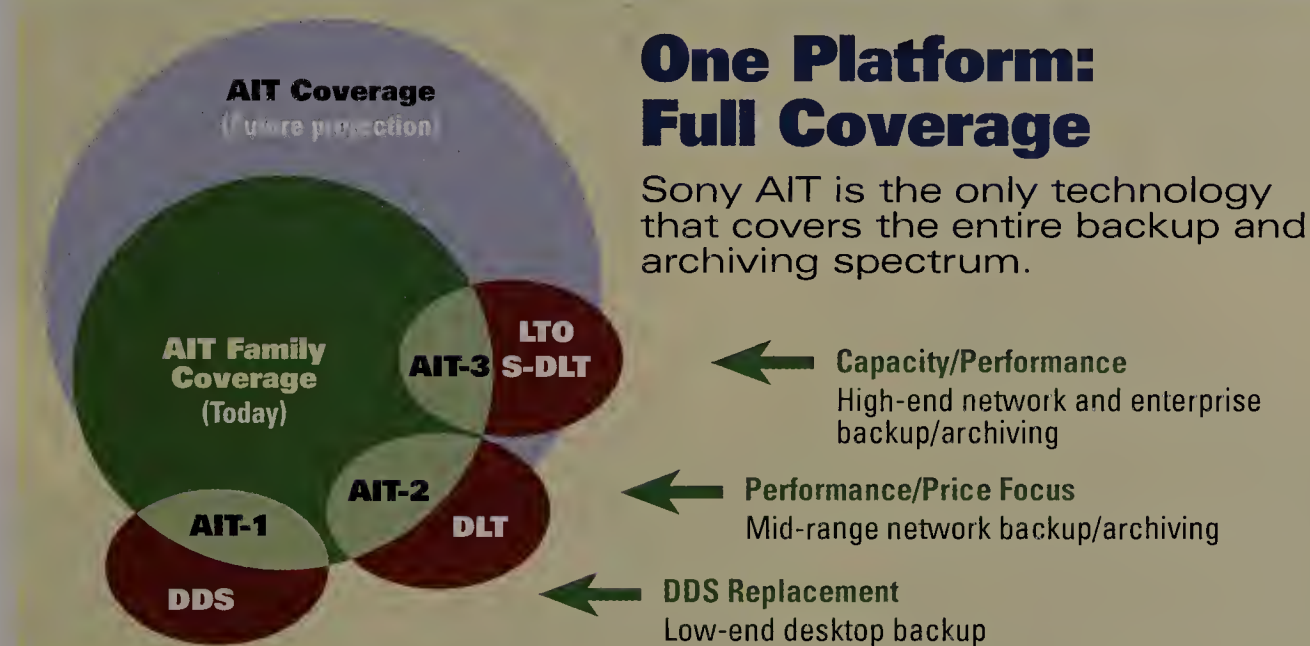
In contrast, DLT-IV media is notoriously unreliable,

subject to the often severe leader problems that are common for leader-based tapes. AIT, on the other hand, has a soft loading system, which allows it to load the media without using motors or levers. This greatly decreases the stress on the tapes and increases the longevity of the media. In fact, AIT can even perform a soft load from the middle of the tape.

- **Performance** – With organizations facing increasingly larger backup volumes and a greater need for faster recoveries for business continuity, drive performance is critical. For large backup applications, AIT compares favorably with the higher speeds of S-DLT and LTO. But for interactive applica-

ware packages such as Veritas Software's Veritas Backup Exec and NetBackup, Legato Systems' NetWorker and Computer Associates' CA BrightStor ARCserve are all compatible with the AIT format.

- **Size** – In backup, less is more. For example, AIT-3 provides at least 250% greater capacity than DLT. At its 100GB capacity, AIT tapes are comparable to S-DLT 110GB and LTO 100GB models, but at just one-third the size. Simply put, this means it's much easier to use AIT for automation and tape libraries because it takes up so much less room. In fact, many companies are able to get twice the number of AIT drives in a given library compared with traditional half-inch drives. AIT also has the world's first 1U autoloader (courtesy of its low power consumption and small media size), making it the perfect fit for tight locations.



One Platform: Full Coverage

Sony AIT is the only technology that covers the entire backup and archiving spectrum.

tions, AIT is far faster because of its superior load, seek and rewind times. For example, AIT has a 39-second access speed, compared to 80 seconds for S-DLT and LTO.

- **Migration Path** – Currently in its third generation, AIT has a defined and proven roadmap that has seen performance and capacity double with each new generation. In addition, all three generations of AIT drives available today are both read and write backward-compatible. S-DLT drives, on the other hand, can not write to DLT cartridges, severely limiting their usefulness.

- **Industry Support** – AIT was created by Sony, one of the co-inventors of the Digital Data Storage (DDS) tape format, and AIT is an open technology supported by more than 27 partners, including HP/Compaq, Qualstar, Advanced Digital Information Corp. (ADIC) and Spectra Logic. In addition, leading backup soft-

Some organizations fear that switching to a different backup tape format will be difficult and costly. But it can be done painlessly. If you follow a standard 30-day backup cycle, most of your organization's data will be on newer AIT tapes within a month. In addition, Sony bundles NovaStor migration tape copy software with each AIT tape drive or library, making it easy to copy critical or frequently-used tapes from other formats onto AIT.

Data backups should be there when you need them. But you shouldn't have to dedicate valuable IT personnel to maintaining finicky tape drives, juggle dozens of tapes to find what you're looking for or wait minutes (or hours or days) to retrieve valuable data. Sony's AIT data storage solutions enable organizations to get on the right path for compatible, reliable and high-performance tape backup. AIT is simply the smart investment.

Learn More About

Sony AIT Solutions

Download the free white paper, "Sony AIT: A New Path to Business Value," and learn more about Sony storage solutions. Visit www.nwfusion.com/sony/HLFCIO

Reality Bytes

A Cold Look at Hot Trends

CRM Is Not for Micromanagers

To get value from CRM, use it to empower people—not to keep tabs on them

BY JOHN SVIOKLA AND AUDRIS WONG

AS PITCHED BY VENDORS, customer relationship management technology is a control freak's dream. CRM systems promise executives every last excruciating detail on sales-force activity, customer service transactions and customer behavior. Vendors also claim CRM systems will provide executives with an X-ray of organizational activity, giving them the control they crave over every action inside the company while delivering a clear view of the sales pipeline for the next quarter. What executive could resist such a tempting promise? But CRM—when implemented primarily to satisfy control-hungry executives—will fail. Indeed, most CRM systems are failing. That's because no amount of information, no matter how detailed, will ever make customer interactions controllable.

So, is CRM good for anything, or have all those companies that implemented the technology just wasted their money? It turns out that CRM can provide real, significant value, but it has to be implemented in partnership with a cultural commitment. This means that executives have to loosen the reins of control; they must see CRM as a tool to empower frontline workers and not as a means for keeping tabs on salespeople.



Signs of Success

There have been a number of successful CRM implementations, and they often share the same four elements. Companies that have implemented CRM to their advantage use the system to meet key customer needs. Those companies also derive in-depth analysis of customer costs and potential profit from their CRM systems. In addition, CRM works best when used to link information from disparate business units or eliminate information silos. And finally, CRM is successful when companies redesign organizational incentives and structure to empower those employees who are closest to the customers.

One company that has successfully implemented customer relationship management, albeit in a defensive maneuver, is Fidelity Investments. By the early '90s, Fidelity had grown into the largest and most successful mutual fund company in the world. Upstart Charles Schwab, however, created OneSource,

ILLUSTRATION BY JOHN UELAND

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its one-stop fund supermarket. Fidelity was flabbergasted.

Schwab was stealing customers by putting itself between the customer and the fund providers. CEO Edward Johnson, the son of Fidelity's founder, felt that OneSource was not just a clever service but a harbinger of a fundamental shift in customer behavior—from product-centric to relationship-centric.

To counter Schwab's move, Fidelity didn't begin by purchasing CRM technology; the company started with an extensive analysis of customer needs as they related to a fund supermarket. Then Fidelity changed the very basic concept of customer from that of "fund owner" to "household." This seemingly simple mind-shift necessitated an activity-based cost-

Fidelity's effort was not driven by the desire to acquire a hot technology; it began with a customer need.

ing effort to discern the true cost-to-serve for each household segment across Fidelity's service channels. Fidelity switched its metrics as well. Instead of concentrating on whether the number of accounts or customers was on the rise, Fidelity began looking at the total value or worth of a customer if she were to have all assets under management.

In order to support this cultural and customer shift, Fidelity drove extensive systems design and building down to the front-line level. The goal was to provide those employees with an integrated view of the customer. Fidelity also created service teams that were tiered by household wealth; representatives on the phone knew the total customer relationship. Incentives were shifted away from simple market share goals by product, to more comprehensive targets that aimed to give compensation to employees for achieving an increased share of investable household wealth.

Fidelity's effort was not driven initially by the desire to acquire a hot technology; it began with a customer need. Fidelity then followed up with analysis and the creation of the necessary technology infrastructure to enable an information flow to support the new view of the customer. Finally, the company demonstrated a willingness to change the organization and implement internal controls to cement its new orientation. At no point was Fidelity's CRM effort motivated by the whims of a control freak.

Industrial Strength CRM

Unlike a financial services company that has to contend with fickle customers, one might reasonably think that CRM would be irrelevant to GE Aircraft Engines (GEAE), a company with only two customers (Boeing and Airbus) and sales—in a good year—of a few thousand units. Analyzing such a level of cus-

tomers and sales data could easily be done with little more than a 3-by-5 index card, a No. 2 pencil and an abacus. Yet, GEAE uses CRM technology to rethink its offerings.

Decades ago, the airlines encouraged engine manufacturers, including GE, to create systems that enable remote monitoring of engines. Over the years, this simple request has blossomed into an entire operating system for engine control. If you're sitting on a newer plane with a GE engine, or a plane with a replacement unit from GE, that engine has an onboard computer collecting thousands of readings from hundreds of sensors while in flight. The data is relayed to a satellite on its light-speed trip to Glendale, Ohio, just north of Cincinnati,

where it enters the GE Applied Statistics Lab. For the past 25 years, GE has combined this focus on technology with an organizational investment in knowledge to create the world's leading center for applied industrial statistics.

This group turns the torrent of data into dollars by understanding its own product and customers' needs better than its competition.

GE does not simply use this information to control the engineers and maintenance workers in more detail. Instead, it encourages the technical and financial groups to work together to win business. Like Fidelity, GEAE has changed its concept of customer needs. The company has moved from selling engines to selling capability-power by the hour. In this marketing approach, GEAE assures a certain level of available power to the customer's fleet. In addition, its sales force uses detailed information about the cost to serve each particular engine to tailor support services based on a customer's specific operational, financial and maintenance requirements. GEAE, like Fidelity, is motivated to use CRM to provide customers with the services they want.

Those companies that use CRM technology to satisfy the cravings of control freaks are bound to waste their money and time. Successful CRM efforts—those that have delivered value for both consumer and industrial companies—start with a new concept of the customer and then drive organizational capability to meet the needs of that new concept. Forget about using CRM to keep watch on your employees or collect every last minutiae of information. Instead, use CRM to analyze profits, distribute relevant information to the right people and reshape the organizational structure to deliver the products and services that your customers really want. **CIO**

John Sviokla, vice chairman of DiamondCluster International, can be reached at john.sviokla@diamondcluster.com. Audris Wong, a principal at DiamondCluster, can be reached at audris.wong@diamondcluster.com.



If you're busy monitoring your servers, who's watching your business?



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To learn how HP ProLiant servers can be a part of maximizing your company's uptime, download CMP's executive brief on high availability at www.hp.com/go/proliant83 or call 1-800-282-6672, option 5, and mention code YPX.



Career Counsel

Expert Advice for Aspiring CIOs and IT Managers

What's in a Name?

Q: Is there a new title being used at the senior executive level to denote the expanding role of the CIO into strategic planning for the entire corporation as well as driving mergers and acquisitions integration? If not, is it time to create one?

A: The changing role of the “head of technology”—represented by the titular transition from IS director to CIO—is all about the inclusion of IT in the corporate mission and business strategy. In this mode, the CIO has a seat at the senior management table to ensure that IT is an integral component of business strategy, and to enable, facilitate and proactively generate competitive advantage for top-line growth and operational optimization for bottom-line performance. While still a very small minority, some top IT executives have progressed further to participation in the fundamental and underlying strategic planning of the company's business. While I'm not aware of any new title that reflects this paradigm, excellence in this capacity may very well lead an ambitious CIO through the glass ceiling to an old title such as general manager, president, COO and even CEO.

Regarding mergers and acquisitions activity, beyond the eval-



uation and integration of the technologies of conjoining entities, there must also be acknowledgement of the essential business processes and procedures. Thus, IT plays a crucial role in these activities, just as the CFO reconciles accounting practices and consolidates ledgers, and the chief marketing officer unifies marketing plans and activities. A C-level officer must own overall responsibility for the merger process. If not the COO, why not a world-class CIO?

—Mark Polansky, a managing director and member of the advanced technology practice in Korn/Ferry International's New York City office

CIO OR CTO?

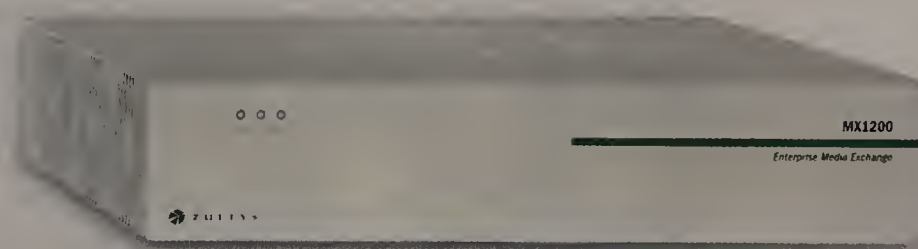
Q: I was recently given the opportunity to change my title from CIO to CTO. Doesn't the workplace equate them?

A: In some instances the two titles are used in an equivalent manner. But in the majority of cases, it is the CIO who heads

ILLUSTRATION BY CAREY SOOKOCHEFF

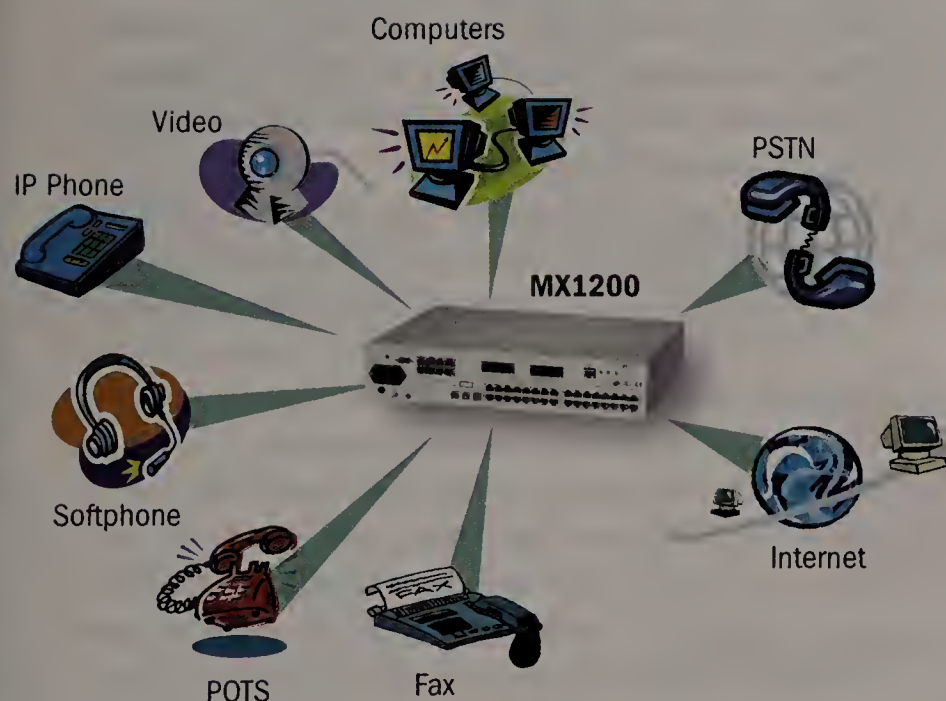
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Career Counsel

up IT in a corporate environment, with the CTO serving in a very important but technology-focused supporting role. This is different from the CTO who typically heads up R&D in an engineering-type environment. The CTO title in a non-vendor environment implies that you do not have full IT accountability. —M.P.

CLARIFY THE ROLES

Q: For the past five years, I have been the CIO of a midsize regional distribution company. The only fly in the ointment is the vice president of operations who, with a tenure of 20-plus years, sees new technology as his purview. How can I clarify the roles of operations, sales and marketing, and IT?

A: I'll assume that your question refers to technical initiatives undertaken by the vice president of business operations, not computer operations. As such, that executive should be your partner and comrade—not your rival—in

agement team of direct reports responsible for all facets of application development and support as well as infrastructure and operations. How many direct reports is largely a function of the IT shop's size and complexity. Application development and support may be divided among managers aligned to the appropriate business and operating functions, or they can be pooled and deployed on a project basis guided by knowledgeable business systems analysts and liaison experts. Infrastructure and operations responsibilities can be assigned to managers of technology planning and acquisition, data center operations, networking, help desk, security and so on, or alternatively to a chief technology officer.

In a composite corporate environment with multiple operating companies, divisions or business units, each of these entities may have its own CIO, each with an organization similar to that just described. Such CIOs typically report on a solid line to the relevant operating unit president or general manager, and on a dotted line to the corporate CIO. That individual has a charter and a corresponding organization for the development and support of corporate applications, and more important, for coordinating common interests among business units. —M.P.

The CIO heads up IT in a corporate environment; the CTO serves in a technology-focused supporting role.

exploring and deploying new technologies to improve the efficiency of his department's activities. Unless management is totally clueless, it does seem likely that the relationships with senior management developed during his 20-year tenure have sanctioned this vice president's technological independence. Additionally, it seems possible that you have been unsuccessful in creating a working relationship with the vice president, regardless of whether it's your fault, his or both.

Your first move is a heart-to-heart with the vice president. Take him to lunch and try to discover the underlying reasons for his behavior. Also, clear the air of prior misunderstandings. It's never too late to begin the process of creating rapport, trust and, most important, collaboration. Don't attempt to have him stop his inventiveness, but instead propose a partnership that should yield even better results for his operations. Alternatively, if you encounter obstinate behavior, then it's time to check with your boss to find out where you stand, and then proceed accordingly. —M.P.

ORG CHART

Q: Given the diversity of the CIO role, what are the typical direct reports and the organizational chart structure for a CIO?

A: In a simple corporate scenario, the CIO must have a man-

COMPANY SIZE

Q: I am currently in my fourth year as CTO for a small midwestern computer software company. I am making good money and have free reign to create solutions. However, the economy has caused a good deal of corporate uncertainty. I am now being approached by a large multinational corporation and have been offered a position as its CIO to be headquartered in Europe. Would this be a good time for a change, and is CTO to CIO a step in the right direction?

A: Small and large companies have their advantages and disadvantages. The entrepreneurial nature of a small company can be exciting and provide freedom, creativity and opportunity. For example, it is possible for a small company that is doing well and has a market-leading product to merge with, or be acquired by, another company resulting in potential professional growth for you. On the other hand, going with a large company could provide stability (good to have in these difficult economic times) and offer broader professional options such as larger budgets and staff accountability, and international exposure. In time, an opportunity may present

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Criteria

The CIO Enterprise Value Awards honor technology-enabled business achievement. Winners will be chosen from entrants who submit completed application forms to *CIO* magazine by May 15, 2003. Entries will be judged on the value of the achievement resulting from the technology investment and the degree to which it serves the organization's mission. Judges are looking for initiatives that have had a broad and significant impact on the enterprise as a whole.

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Finalists are selected by judging teams made up of *CIO* magazine editors and CIO Enterprise Value Awards Review Board members (respected academics and consultants) and Judges (a blue-ribbon panel of leading CIOs). Once the judging teams have selected industry winners, a site visit from a member of our Review Board may be required to substantiate claimed benefits. Site visits will take place in July, August and September. The Review Board will present its findings to the judging panel of CIOs for final selection of up to three Grand CIO Enterprise Value Award winners.

How to Apply

Download the application at www.cio.com/eva or contact Lynne Rigolini at eva@cio.com or call 508-935-4088.

Important Dates

Deadline: Applications must be received by May 15, 2003.

Notification: Winners will be notified in October 2003.

Presentation: Awards ceremony takes place during the CIO Enterprise Value Retreat, February 8-10, 2004. Winners will be profiled in the February 1, 2004, issue of *CIO* magazine.

Entry Guidelines

- The system must have been operational prior to April 1, 2002.
- Entries must be made jointly by the CIO/IT executive sponsor AND by the business sponsor for whom the system delivers value. Both must sign the Truth of Information release.
- Entrants must agree to be featured, along with their systems and organizations, in a *CIO* article.
- IT vendors, public relations and advertising companies, consultants and other third parties may NOT apply on behalf of another company. They are encouraged to forward the application to the "owner" of the system or to contact *CIO* magazine to recommend that the client be contacted to fill out an application form.
- IT vendors may submit applications for an IT system that they used internally to help run their businesses better.
- Entrants will apply within one of the 10 industry categories.
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(including automotive, aerospace and defense, construction, engineering, chemicals, metals and mining)
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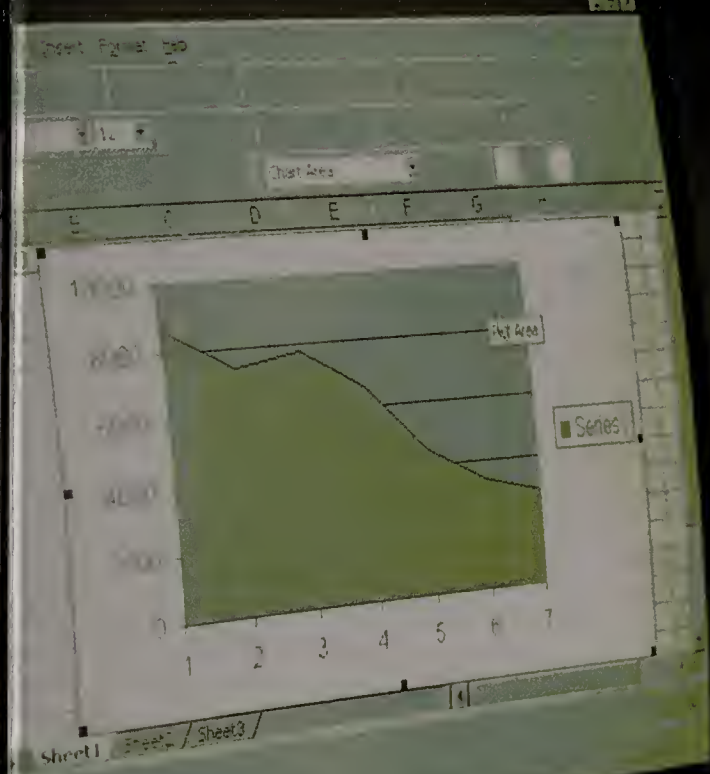
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itself to run a business as a general manager; however, with this opportunity comes the bureaucracy and politics that exist in all large corporations.

The answer to your decision lies with questions you must ask yourself. Where do you want to be professionally five years from now? What do you hope to have accomplished? Once you've answered those questions, you should know whether your aspirations could be achieved at your current company or

day-to-day operations, it is the CIO who holds top-line responsibility for all strategic and tactical facets of IT. The CTO—who usually reports to the CIO—is tasked with evaluation, acquisition, deployment and the support of new technologies, and the development and implementation of new IT initiatives. Given your current position as a senior applications developer, coupled with an MBA-like master's degree, I would conclude that you intend to pursue the CIO

career path. You should be looking for opportunities now that will provide you with project and staff management experience, and as much exposure to business problem solving and collaboration with business unit staff as possible.

—M.P.

The titular transition from IS director to CIO is all about the inclusion of IT in the corporate mission and business strategy.

only with another employer. I would also advise you to think hard about whether you would be happy in a large corporate environment. Try to speak to people you know and trust about your tolerance level for bureaucracy. If you do think you could handle a large corporation, I can add that recruiters like to see candidates who are successful in both large and small companies. It demonstrates flexibility and the ability to deal with the ambiguity that often exists in large organizations.

Finally, depending on the industry, the CIO role typically has broader responsibilities than the CTO. The role of the chief information officer is a stressful job, and turnover can be high as there is significant pressure to do more with less. To be successful, you must effectively navigate the highest echelons of the company and put a solid team “on the field” that can execute effectively.

—Gerry McNamara, partner of Heidrick & Struggles, Charlotte, N.C.

FOCUSING EFFORTS

Q. I am a senior applications developer with good experience in all areas of software project management with heaviest involvement on the development side. I will soon graduate from a top-25 business school with a master's degree in management of information systems, an MBA-type program, with particular emphasis on e-business and general IT management issues. Since there are no career advancement or promotion opportunities at my current company in which I could use my newly acquired knowledge, I am considering my next move toward the end goal as a CTO/CIO position. Where should I focus my search efforts?

A: First things first: Do you want to be a CIO or a CTO? On the corporate side, where technology is applied to the information and transaction processing needs of the enterprise's

ON THE PATH

Q. I am interested in pursuing the coveted CIO position. I have a technical background in networking and network operating systems. I hold an MA in international relations, am currently working toward an MBA in e-commerce, and I am PMP certified. I am a consultant with a very large corporation in the e-solutions business, and I'm currently assigned as an account program manager at an applications development company. I manage 10 people with ultimate responsibility for service delivery of help desk and desktop support for a 5,000-user environment. My current employer does not have positions available above project manager that would directly relate to a CIO career path. Should I seek a position outside my company? If so, at what level should I pursue such opportunities?

A: This is a classic consulting and vendor company career dilemma: How does one manage an IT-oriented career in an environment that is driven by the firm's need to generate billings and to satisfy the tactical requirements of its customers? Clearly, the P&L characteristics of IT products and services companies mandate that client-facing front-line employees remain focused on revenue generation (sales) and contract fulfillment (service delivery). So if you want to take a run at the CIO position, you must make the jump across the career aisle to find your next opportunity in a corporate milieu deploying, rather than supplying, IT solutions. Likely positions to pursue include manager or director of end user computing and services, distributed computing and networking, and the like, to take advantage of your experience. Any chance to utilize your international or e-commerce educational background would be a major plus for both you and your next employer. —M.P. **CIO**

The Web-based Executive Career Counselor column is edited by Online Research Manager Kathleen Kotwica (kkotwica@cio.com).

A large pink elephant is superimposed over a photograph of a business meeting. The elephant's head and trunk are in the foreground, while several business professionals are seated around a conference table in the background. The scene is dimly lit, with light coming from windows in the background.

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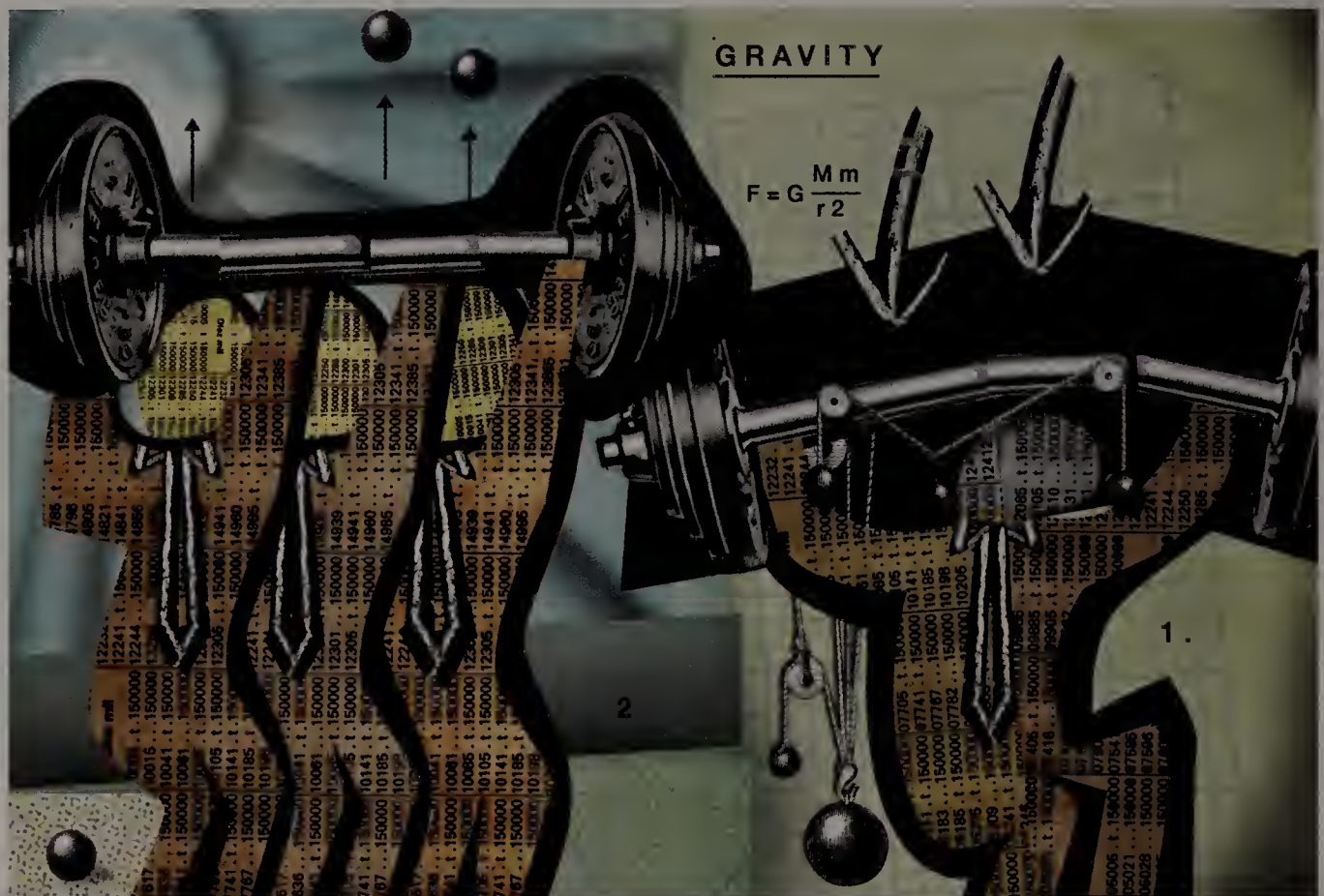
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Gathering in Clusters

Lower costs and improved performance spur growing interest in clustering

BY JOHN EDWARDS

Edited by Christopher Lindquist. Send your thoughts and ideas for future columns to clindquist@cio.com.

WHEN IMMIGRANTS LANDED on New York's Ellis Island in the 19th and early 20th centuries, record-keeping consisted primarily of scribbling a few notes into a big book. Today, The Statue of Liberty-Ellis Island Foundation requires pow-

erful computer technology to store and present some 25 million individual records and 3.5 million related images.

Like a growing number of enterprises, the foundation has discovered that clustering—the

Clustering...GNU radio...CIA goes VC



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THE POSSIBILITIES ARE INFINITE

practice of connecting two or more computers together in such a way that they behave as a single computer—is the answer to its massive data management requirements. Clustering technology, which is used for functions such as load balancing, fault tolerance, high availability and high-performance computing, has been available for several years. Now, the inter-related lures of enhanced performance and lower cost—made possible by new software and hardware technologies—are encouraging a growing number of enterprises of all sizes to look into clustering technology. The number of new clustered servers installed worldwide is projected to increase from nearly 772,000 in 2002 to around 1.8 million in 2007, according to Gartner.

Reasons to Be Popular

Clustering offers a variety of advantages over other system architectures for a vari-

ety of tasks. And no single issue is driving clustering's rising popularity, says Nathaniel Palmer, vice president and chief analyst at Delphi Group, a Boston-based IT consulting and research company. "There are several different trends, ranging from how computers are built to the emergence of new software standards," he says.

In an IT world where data consistency, availability and reliability are paramount, the redundancy of clustering can't be matched by standalone systems—or even multiple machines.

Other analysts agree. "Web services development, the shift toward scaling out at the edge server level and in business logic servers, and the emergence of new blade server systems will drive up the use of clustering," says Jamie Gruener, a senior enterprise computing and networking ana-

lyst at the Yankee Group, a Boston-based technology research firm. Add the fact that major hardware vendors—including Dell, Hewlett-Packard and IBM—are aggressively promoting clustering, and it's no surprise that the technology's profile is rising rapidly.

The Cluster Migration

It's also quite easy to make a solid business case for a move to clustering. In an IT world where data consistency, availability and reliability are paramount, the redundancy of clustering can't be matched by standalone systems—or even multiple machines.

For Sam Daniel, The Statue of Liberty-Ellis Island Foundation's IT director, clustering proved to be the most affordable answer for powering an extensive 100GB database and a website that can receive as many as 8 million requests per second (which can happen, for example, when the

site gets television publicity). "It would have been more expensive to get one huge server to handle all these types of queries coming to our site," says Daniel, who adds that clustering also allows for cheaper and easier scalability. "By putting in a cluster system, we could add in several less costly servers as the need arises." Daniel estimates that the hardware, software and maintenance makes the cluster at least 30 percent less expensive than acquiring and operating a large, standalone server.

The foundation currently operates 25 Windows 2000-based HP ProLiant DL360 Web servers. Database operations run on a pair of DL580 servers, with four

Ganging Up

Technology Clustering

Anticipated benefits Lower cost and enhanced performance, thanks to load balancing, scalability, fault tolerance and high availability, among other factors.

Hurdles Identifying hardware and software vendors that can provide suitable clustering technology and smooth implementation and operation. Training staff members in clustering technology.

Primary markets Small to large enterprises that need a powerful, scalable and highly reliable computer system.

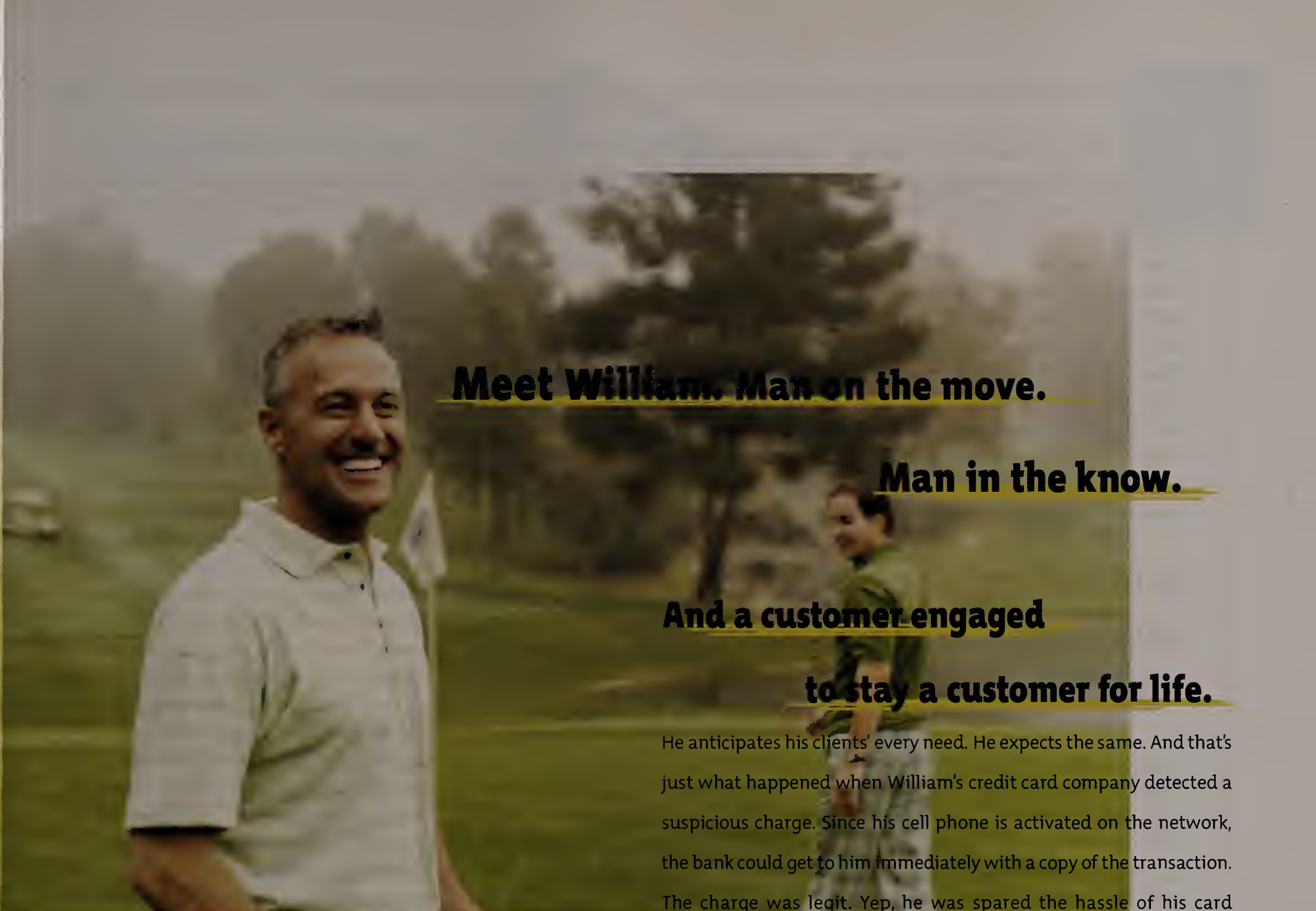
Estimated cost Upward of \$20,000, depending on the cluster's size and complexity.

processors each, running Red Hat Linux 7.2 and Oracle 9i Real Application Clusters (9i RAC). The installation, completed last year, replaced a pair of nonclustered Compaq AlphaServer systems, which Daniel says suffered from being both underpowered and unreliable. "All the traffic and all the queries would go to one server," he recalls. "In case that server went down, we had another server to boot up, but that would take about 15 minutes."

Daniel decided that a cluster-based configuration would provide both the capacity and availability the foundation required. "We used to go down several times during the week," he says. "Now we bring down our database servers only for maintenance—about every two months." The more reliable technology has also given Daniel better control over personnel allocation. "We're able to free up a lot of time for people to move over to other long-term projects," he says.

A Software Thing

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ware is helping to push cluster systems further into the IT mainstream, say analysts. "New platforms such as Oracle 9i RAC, IBM DB2 Enterprise Edition and others are starting to make customers consider a more distributed view of achieving availability and performance," says Yankee Group's Gruener. Delphi Group's Palmer concurs. "With new approaches—being able to partition application logic and to run applications on multiple servers—the big cost advantages and the performance advantages of clusters have increased significantly," he says. Palmer

When Livermore, Calif.-based Livermore Software Technology, the developer of the simulation application used by DaimlerChrysler, ported its software to Linux, Picklo decided it was time to begin a move toward clustering.

The impact simulation software now runs on a 172-node IBM IntelliStation cluster. But while powerful, the cluster still only supplements DaimlerChrysler's existing high-end computer inventory—at least for now. (The cluster replaced roughly 20 percent of DaimlerChrysler's existing impact simulation capacity.) "We still do

"With clustering technology, if you lose a piece [of the system] you only lose one job." DaimlerChrysler's cluster system can support up to 28 concurrent jobs.

Speedier CPUs and the ability to tap the power of multiple processors located inside a single server are giving clusters power equal to—or in some cases in excess of—standalone supercomputers. Each of DaimlerChrysler's workstations, for example, includes a pair of Intel Xeon CPUs, giving the system a total of 344 processors.

But cluster technology isn't relegated to a single box or boxes sitting side by side. Down the road, grid computing could play an important role in clustering. Grid computing can harness the unused processing cycles of LAN- or Internet-connected computers to handle tasks that are too intensive for a standalone machine. The approach promises a fast, cheap and easy way to gain clustering power. Instead of installing new servers, a CIO could simply tap into a network of additional processors supplied by service providers. "It becomes a utility that's used just like electricity or phone service," says Delphi Group's Palmer. Grid computing could emerge as clustering's next phase, although security, bandwidth usage and availability problems currently tarnish its overall appeal.

In today's tight market, vendors are always anxious to help their customers migrate to clustering.

points to less expensive and cluster-friendly operating systems—particularly Linux—and the increased use of Java and other development environments that are capable of supporting application logic partitioning as key elements in clustering's rising popularity.

At automaker DaimlerChrysler, better cluster-oriented software and hardware have given the company the ability to run specialized applications, such as vehicle crash simulators, in a clustered environment. "Companies like IBM are beginning to offer these clusters that are specifically tailored for our environment, like high-performance computing," says John Picklo, the high-performance computing manager for DaimlerChrysler in Auburn Hills, Mich.

A cluster installed last year by DaimlerChrysler, for example, intends to give the automaker's engineers a better understanding of various vehicle design factors. "We try to avoid the word *crash*, but basically we simulate what happens to a vehicle in a crash or an impact so that we can determine if it's safe enough before we actually begin to build them," says Picklo.

this work on traditional Unix supercomputers—things like HP Superdomes," says Picklo, although he notes that clusters will likely play a dominant role in the company's future high-performance systems planning.

The decision to add a cluster system was based purely on price-performance criteria, including the cost of the hardware and software, maintenance expenses and estimated downtime losses, says Picklo. "We estimate that this cluster is 20 percent faster than something like a large Unix server," he says. "It's also 40 percent less expensive."

Fault tolerance was also a major performance consideration for DaimlerChrysler when it decided to adopt clustering. "A cluster is more resilient," says Picklo. "When you have a big, single machine that's running many jobs and you have a hardware failure, you lose the whole machine." With its standalone systems, the company's engineers often run as many as five simulations at one time. "If we had a problem, we would lose all five, and you might lose a couple of days' worth of work," says Picklo.

No More Bags of Wires

With the cluster market continuing to expand, and competition remaining cut-throat, vendors are striving to make it easier for customers to get a clustered system up and running. The days when a CIO would buy some servers and a clustering kit—a "bag of wires," as Picklo describes it—are quickly receding into history. In today's tight technology market, vendors are always anxious to help their customers migrate to clustering, often at a cost that's more than equalized by the added benefits of a pain-free, speedy implementation. "It's well worth the extra investment," says Picklo.

IBM delivered its IntelliStation cluster



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to DaimlerChrysler as a turnkey system. "They did all the work on their own, put it all together and even tested it before they shipped it to us," says Picklo. As a result, the system went into full operation less than two months after delivery, far ahead of Picklo's expectation.

To keep things running smoothly when installing a cluster, it's imperative for an IT department to work closely with both hardware and software vendors. When Green Mountain Power was ready to implement its new clustering system—just prior to HP's acquisition of Compaq—it turned to its vendors for installation support. "Compaq came in first and set up the machines for us, and then Oracle came in a few days later and got the database and 9i RAC set up for us," says Todd Julius, chief technology manager for the Colchester, Vt.-based power utility. "We were up and running without any problems within 16 days, which was nice and fast for us."

Clusters may now be less troublesome to install and can provide a greater level of reliability than standalone systems, but they are not a panacea—and CIOs shouldn't cloak themselves in a false sense of security. "You must make sure that your IT team does its job by taking a staged approach," warns Gruener. "Do all of the necessary work to make sure clustering will be 100 percent available." Thorough testing, under a variety of real-world conditions, will help ensure that a cluster will perform as designed.

Given continuing budget constraints, CIOs must squeeze the maximum value out of a limited budget. Clustering can go a long way toward maximizing value. "We're getting more performance for a lot less cost," says Daniel. "When you're hungry and you need to do something good, you actually find out what the best systems are." ■

John Edwards is a freelance technology journalist who lives in Arizona. He can be reached via e-mail at john@john-edwards.com.



UNDER DEVELOPMENT

Software radio

Something GNU in Radio

IMAGINE AN INFINITELY flexible radio. Simply by loading in various free programs, you could turn the device into a multistandard mobile phone, a GPS locator, an AM-FM stereo receiver or even a portable TV. That's the goal of the GNU Radio project, which aims to help radio escape from its box.

Eric Blossom, the project's leader, says moving radio to software makes a lot of sense, since it would eliminate the need to purchase and install hardware components. "We're trying to turn hardware problems into software problems," says Blossom. "Generally, software problems are quicker and easier to solve than hardware problems."

Software would also allow the creation of radios that have been impractical to build using traditional design techniques. A software-based radio could, for example, let users simultaneously listen to an FM music station, monitor a maritime distress frequency and upload data to an amateur radio satellite. Developers could also create a "cognitive radio" that seeks out unused radio frequencies for transmissions. "That could go a long way toward solving the current spectrum shortage," says Blossom.

The GNU Radio project also wants to throw a virtual monkey wrench into the efforts of big technology and entertainment companies to dictate how, and on what platforms, content can play. By creating a user-modifiable radio, Blossom and his cohorts are staking a claim for consumer control over those platforms. "The broadcast industry has a business plan that fundamentally hasn't changed since 1920," he says. "I don't see any constitutional guarantee that some previous business plan still has to be viable."

Work on the GNU Radio project's first design—a PC-based FM receiver—is complete, with an HDTV transmitter and receiver in the works. Yet developers must overcome power consumption issues and other hurdles before a software-defined radio becomes practical. Blossom estimates that it will take about five years before user-modifiable radios hit the mainstream. "Stayed tuned," he says.

—J.E.

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COMPANY TO WATCH

In-Q-Tel

Homeland Investment

The CIA's venture fund seeks technology for government use but with private-sector market potential

BY MEGAN SANTOSUS

AS AN ORGANIZATION consumed by the collection and analysis of information, the Central Intelligence Agency is keenly interested in IT on the cutting edge. So in 1999 the agency got into the high-tech venture capital business by launching In-Q-Tel, an independent, private and nonprofit organization charged with identifying and investing in technologies "that serve U.S. national security interests."

Although its mission sounds sweepingly vague, In-Q-Tel, with offices in Arlington, Va., and Menlo Park, Calif., focuses its attention on technologies that can be used in the private sector as well as in government and law enforcement. "We're looking for solutions for enterprise problems—technologies that help large organizations work better whether they are Fortune 500 companies or the government," says Stephanie Stern, a senior associate in In-Q-Tel's marketing and communications department. The organization's particular areas of focus include distributed data collection, geospatial information services, knowledge management, search and discovery, as well as security and privacy.

To select appropriate technologies and companies, In-Q-Tel's pair of strategic business teams relies on an ever-changing blueprint that defines the CIA's most pressing technology needs. To meet them, In-Q-Tel does not limit its financial involvement to startups; the organization has also made equity investments or funded product development at established companies. And In-Q-Tel's overall investments in any given company certainly aren't high by the venture industry's recently achieved lofty

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Investments

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standards. Thus far, In-Q-Tel's individual investments have ranged from a modest \$500,000 to \$3 million. Unlike a typical venture company, however, In-Q-Tel does not measure its success in terms of return on investment. Instead, it gauges it according to how effectively the CIA uses the funded technologies. "Our driving metric is the return on technology," says Gayle Von Eckartsberg, an In-Q-Tel spokeswoman.

Taken as a whole, the In-Q-Tel investment list creates a mesh of technology intended to collect, secure, analyze and distribute data—exactly the kinds of activities a government information agency would appreciate. Systems Research & Development (SRD), a 20-year-old provider of software applications originally developed for the gaming industry, is a prime example. John Slitz, SRD's CEO, says his company's flagship technology is "non-obvious relationship awareness," a software package called NORA that lets

organizations identify correlations hidden inside huge amounts of unstructured data—in real-time.

In the casino business, for example, a cheat may use several aliases. When checking in at a hotel, SRD's software can instantaneously link one alias with a list of others that the cheat has used in the past, quickly identifying a connection among the various names. Apply the same technology to homeland security and exchange the term *cheat* with *terrorist*, and it's easy to understand the CIA's interest in SRD.

The same synergy is apparent in another In-Q-Tel-funded company. Vienna, Va.-based MetaCarta offers knowledge management software with a geographic twist. Enter a person's name in a search field, and MetaCarta's software filters large volumes of unstructured text documents for geographic references. It then visually charts the results on a map. A quick search of the Internet using my name, for example, revealed that I wrote five stories connected to Texas in one way or another. A similar search using the name of a suspected terrorist might prove significantly more valuable.

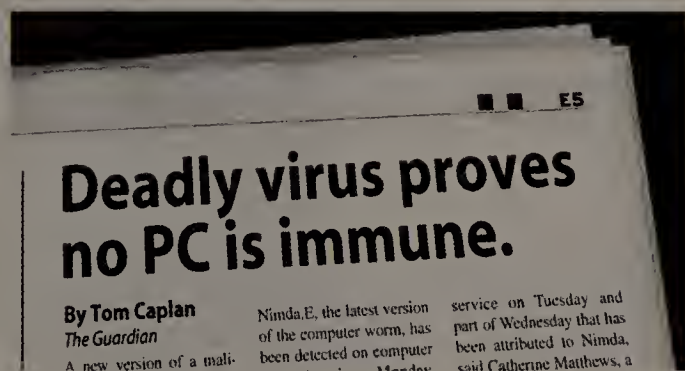
In-Q-Tel's investments cover more than data analysis. After 9/11, the intelligence community was roundly criticized for its inability to share information among various agencies and departments. That criticism may help explain In-Q-Tel's investment in Traction Software. Traction's TeamPage product lets users easily edit, access and share data via an interactive website. Essentially, Traction is in the business of providing enterprise Web logging tools. Once data resides in TeamPage, users can archive and search the information "just like Google," says Tim Simonson, Traction's CEO.

During its relatively short life, In-Q-Tel has already reviewed the business plans of some 3,000 potential investment targets and has invested in more than 20 companies. With homeland security now a top priority, In-Q-Tel appears poised to have a very busy future. **CIO**

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EXECUTIVE Summaries

April 1, 2003

SPECIAL REPORT: THE STATE OF THE CIO Strategic IT Leadership

By Edward Prewitt and Stephanie Overby | 58

Despite the pressure to cut and the charge to do more with less, "The State of the CIO 2003" survey proves that CIOs are looking ahead rather than hunkering down. More than three-fourths of the 539 respondents said strategic thinking and planning is pivotal to success in this business climate. That's a major increase from last year's survey, when only 46 percent listed strategic thinking and planning among the three most important CIO skill sets. Today, being strategic is characterized by the following perspectives and actions: taking an enterprisewide view rather than simply focusing on the IT department; welcoming business heads into the planning process rather than assuming that they will turn up providentially; devising budgets based on what can benefit the company as a whole rather than responding serially to the requests of individual business chiefs. And above all, strategy for CIOs means being aware of the powerful effect IT has on the enterprise's competitiveness. CIOs must develop or perfect governance models and mechanisms to ensure that IS and business managers turn these strategic mandates into realities.

Research Report

By Lorraine Cosgrove Ware | 67

THIS YEAR'S "STATE OF THE CIO" SURVEY shows that new technologies and staffing concerns have taken a backseat to finding best practices for partnering with the business and delivering the greatest value to the organization. Pressure has increased to deal with tight budgets while finding a way to deliver on mounting demands. The greatest challenge for the balance of the year, respondents said, will be prioritizing these demands. This year's survey also finds a shift in spending priorities versus last year—namely security has moved up from the bottom half of the list in 2002 to become the fourth highest IT spending priority. Integrating systems and processes remains the top spending priority, as companies continue to squeeze efficiencies out of their operations.

CIO Best Practices

By Elana Varon and Stephanie Overby | 74

FROM AMONG THE CIOs RESPONDING to "The State of the CIO" survey, CIO editors culled a subgroup that, based on their responses to particular questions, were judged by the editors to exemplify best practices for the profession. These topflight CIOs then ranked conditions and actions they deemed most critical to successfully leading IT in their organizations. The top six, in descending order of importance, are: 1. The CIO must be a member of the executive team; 2. Senior business managers must be involved in planning IT projects; 3. Users must provide input to those same projects; 4. A high-level group such as a steering committee must be responsible for IT decisions; 5. There must be regular communication between the IT group and end users; and 6. IS staff members must serve as liaisons to the business units. CIOs from companies of all sizes explain the best way to make these conditions a reality and make them pay off.

"You can always improve. If you're not surveying your customers, you might be fooling yourself, and you will be replaced. I can't imagine anyone staying in maintenance mode today—the economy is changing so rapidly."

—LIZA LOWERY, CIO OF THE CITY OF LOS ANGELES

Book Excerpt: Project Chunking

By Cathleen Benko and
F. Warren McFarlan | 92

COMPANIES ARE CONSTANTLY gaining new data that should be used to shape (or reshape) ongoing projects. To take advantage of this, and reduce the rate of big project failure, use an approach called "project chunking"—breaking projects into more easily managed steps—suggest Cathleen Benko and F. Warren McFarlan in their new book, *Connecting the Dots: Aligning Technology Initiatives with Corporate Strategy*. With less investment at any given time and because each chunk realizes benefits, companies can take stock before proceeding with the next chunk. Each chunk can take advantage of new information about markets, competitors or technology. One caveat: Chunking requires a clear road map and an understanding of where the end-state lies.

Emerging Technology: Clustering

By John Edwards | 116

CLUSTERING—the practice of connecting two or more computers together so that they behave as one—is used for functions such as load balancing, fault tolerance, high-availability computing and high-performance computing. It's been around for several years, but less expensive and cluster-friendly operating systems—particularly Linux—and the increased use of Java and other development environments are drawing a growing number of enterprises to it, ranging from The Statue of Liberty-Ellis Island Foundation to Daimler-Chrysler and Green Mountain Power. Down the road, grid computing, which harnesses the unused processing cycles of Internet-connected computers, will offer a fast, cheap and easy way of gaining clustering power. While clusters are becoming less troublesome to install and provide a greater level of reliability than standalone systems, they still require thorough testing under a variety of real-world conditions.

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